D.P.U. 95-1-CC

Investigation by the Department of Public Utilities, on its own motion, into Boston Edison Company's conservation charges, and the various components of those charges, including but not limited to the Company's Demand-Side Management monitoring and evaluation reports.

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I. INTRODUCTION

On August 16, 1994, Boston Edison Company ("BECo" or "Company") filed with the Department of Public Utilities ("Department") its Third Annual 1992 & 1993 Demand-Side Management ("DSM") Program Reconciliation Report ("1993 Reconciliation Report"). On September 1, 1994, the Company filed with the Department its 1995 Conservation Filing which seeks approval of the Company's DSM programs for the period between the end of the period for which the Company's programs have been preapproved, December 31, 1994, and the point at which new programs are approved in Phase IV of the Company's current Integrated Resource Management ("IRM") proceeding, Docket D.P.U. 94-49. On September 7, 1994, the Company filed with the Department monitoring and evaluation reports ("M&E reports")[1] which support the 1993 Reconciliation Report. The results of these evaluations are used by the Company and the Department for planning purposes and for determining the DSM incentive earned by the Company as a result of the implementation of its DSM programs during 1993. The DSM incentive will be recovered through the Company's 1995 Conservation Charge ("CC") rates. On October 20, 1994, the Company filed with the Department its 1995 proposed CC rate filing. The matters were docketed as D.P.U. 95-1-CC.

Pursuant to notice duly issued, a public hearing was held at the Department's offices on

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[1] The M&E reports consist of impact evaluations, process evaluations, and implementation evaluations which support the Company's Reconciliation Report. Impact evaluations use quantitative analyses to assess energy and demand savings resulting from the implementation of DSM programs. Process evaluations focus on qualitative issues such as program design and operational efficiency. Massachusetts Electric Company, D.P.U. 90-261, at 99 (1991). Implementation evaluations use installation and savings estimate information to determine an optimal level of program implementation.

September 27, 1994. The Department granted the petition for leave to intervene filed by the Conservation Law Foundation ("CLF"). The Attorney General of the Commonwealth ("Attorney General") intervened pursuant to G.L. c. 12, § 11E. No other petitions for leave to intervene were filed. On October 14, 1994, the Department held a technical conference to investigate the 1993 Reconciliation Report and M&E reports. Evidentiary hearings were held at the offices of the Department on November 9, 10, 15, 16, and 18, 1994.

In support of its filings, the Company sponsored the testimony of three witnesses: Kathleen A. Kelly, manager of the pricing research and evaluation department; Ellen K. Angley, division manager of the demand planning division; and Jerry S. Greer, manager of the evaluation group. CLF sponsored the testimony of two witnesses: David C. Hewitt, technical consultant on residential matters to CLF; and Chris Robertson, technical advisor to CLF regarding commercial and industrial conservation and demand-side management design and management issues.

The evidentiary record contains 253 exhibits. The Company submitted 39 exhibits and responded to 39 record requests of the Department, five record requests of CLF, and eight record requests of the Attorney General. CLF submitted 49 exhibits,[2] which include the Company's responses to 46 information requests. CLF responded to one record request of the Department. The Attorney General submitted one exhibit, the Company's response to an information request. The Department submitted 164 exhibits, which included the Company's responses to 153

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[2] On January 3, 1995, CLF submitted a Motion to Reopen the Record to receive the Company's response to record request CLF-RR-16 in D.P.U. 94-49. The motion was not opposed. The motion was granted on January 5, 1995. The exhibit is marked as Exhibit CLF-49.

information requests and CLF's responses to ten information requests. The Company, CLF and the Attorney General filed initial briefs on December 9, 1994 and reply briefs on December 14, 1994.

On January 6, 1995, the Company filed a Motion to Reopen the Record to File an Additional Exhibit consisting of a table showing a recalculation of the cost-effectiveness of the Company's proposed 1995 DSM programs without environmental externality values ("Record Update"). The proposed exhibit was submitted in response to the Supreme Judicial Court's ruling in Massachusetts Electric Company v. Department of Public Utilities, 419 Mass. 239 (1994) in which the Court vacated the Department's order establishing monetary values for environmental externalities. In addition, the Company proposed that the Department defer approval of certain DSM programs which the Company has deemed not cost-effective. The Attorney General and CLF each filed a response to the Company's Motion on January 11, 1995. Neither the Attorney General nor CLF opposed the Motion, however, the Attorney General requested additional time in which to comment on the Company's proposal to exclude environmental externalities from the evaluation of the cost-effectiveness of its DSM programs (CLF Response to Company Motion; Attorney General Response to Company Motion). On January 20, 1995, the Attorney General filed additional comments on the Company's proposal. The Department hereby grants the Motion to Reopen the Record and marks the exhibit as Exhibit BE-39. The Department addresses the Company's proposal in Section II, below.

In this Order, the Department addresses (1) whether the Company's 1995 program designs and budgets are reasonable; (2) whether the Company's 1993 impact evaluations satisfy the

criteria established by the Department for the review of such evaluations;[3] and (3) whether the Company's CCs and the components thereof are acceptable.

II. PREAPPROVAL OF 1995 DSM PROGRAM DESIGNS AND BUDGETS

A. Introduction

In this proceeding, the Department has reviewed the Company's DSM preapproval filing with respect to directives issued in BECo's last IRM case, Boston Edison Company, D.P.U. 92-265, and in light of the changing electric utility industry, and the increasing level of competition faced by the Company.

In the 1995 Conservation Filing, the Company requested preapproval of DSM program designs, and cost recovery for them, pending the procurement of DSM programs through a competitive process pursuant to the Company's current IRM proceeding, currently anticipated in April 1996 (Exh. BE-1; Tr. 2, at 78-80). The Company stated that it anticipated continuing implementation of its currently proposed programs until the completion of Phase IV in D.P.U. 94-49, should the schedule in that proceeding be extended (Exh. DPU-91).

In its Record Update, the Company requested that the Department approve for immediate implementation those programs that remain cost-effective without consideration of monetized environmental externalities ("Category I Programs"), as well as those programs in which the Company has made commitments to customers and for which the goals and budgets had been

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[3] The Department does not address in this Order the process and implementation evaluations included in the M&E reports. The Department notes that companies are expected to consider all recommendations contained in the process and implementation evaluations and to revise program designs to reflect all appropriate recommendations. However, the Department used information from the process evaluations to assess the quality of data used in the impact evaluations for some programs.

preapproved by the Department in previous Orders ("Category II Programs") (Exh. BE-39). The Company also proposed that the Department defer approval of four residential programs that are not cost-effective without considering environmental externalities ("Catergory III Programs") until the Company redesigns such programs to be cost-effective (if that is feasible), which the Company stated it will do within 30 days of issuance of the Department's Order in this docket (id.).

The Company has proposed no new or expanded programs, basing its decision on the Department's Order in Boston Edison Company, D.P.U. 92-265 (1993), addressing the Company's previous IRM filing (Exh. BE-1). The Company provided brief program descriptions, estimates of participation levels, projections of expenditure levels, energy and capacity savings estimates, and program cost-effectiveness estimates (Exh. BE-1, Atts. 1-3). The Company provided a description of all changes it has proposed to its programs from the way they are currently being implemented (Exh. DPU-1, at 1-4).

In the following sections, the Department reviews the budget level for 1995 DSM program implementation proposed by the Company, the changes in the programs the Company proposes to implement immediately, the types of programs (i.e., retrofit, lost opportunity, market transformation or other) the Company has proposed, and the Company's proposal to defer approval of several programs.

B. Proposed Budget Level

1. Description

BECo originally submitted a budget for its 1995 DSM programs of $43,005,000,[4] a decrease from the 1994 budget level of approximately $15 million (Exh. BE-1, Att. 1; Tr. 2, at 5-6). BECo stated that the budget was developed while the Company balanced four factors: BECo's financial integrity; customer rate impacts; the Company's commitment to DSM; and the transition to providing DSM services through IRM (Tr. 2, at 4-5).

2. Positions of the Parties

CLF argues that the Company should maintain its DSM budget at the 1994 level of approximately $58 million, place more emphasis on lost opportunity programs and market transformation efforts, and minimize rate impacts by phasing out amortization of DSM expenditures over a period of years (CLF Brief at 3-8).

The Company responds by stating that there is no record support for increasing the 1995 budget to the 1994 level, and that BECo balanced consideration of budget levels with that of further amortization of costs and rate continuity when it determined the level of DSM expenditures for 1995 (Company Reply Brief at 22). The Company also submits that, were CLF's proposal to increase expenditures and to amortize some of those expenditures to minimize rate impacts to be accepted, carrying costs on the amortization would increase; energy savings from higher participation levels would increase; and lost base revenue associated with those increased savings would increase (id. at 23). Finally, the Company argues that CLF's proposed choice of budget levels does not address concerns for rate continuity or for the most cost-effective use of the limited financial resources of utility companies (id. at 22).

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[4] The total level may change as a result of the Company's proposal to redesign four residential programs it deemed non-cost-effective. See Section II.C.3.

3. Analysis and Findings

As the electric utility industry undergoes major changes, and companies are subject to increasing competitive pressures, the Department is concerned that our standards and policies do not constrain the companies we regulate from operating effectively in this new environment. To that end, in recent orders, the Department has stressed an electric company's responsibility to manage its DSM programs prudently in light of circumstances existing and knowledge available at any particular time, and for companies to be able to adapt to changing circumstances and to respond to new opportunities on a timely basis. Western Massachusetts Electric Company, D.P.U. 92-88-A at 14 (1994) ("D.P.U. 92-88-A"); Massachusetts Electric Company, D.P.U. 92-217-A at 6 (1993) ("D.P.U. 92-217-A").

The Department finds that BECo has determined a budget level for its 1995 DSM programs after careful planning and consideration of a number of factors that were, and should have been, of concern to the Company's management. The Company has proposed a broad range of programs for all customer sectors, and has also taken rate impacts into account when setting the budget level. Accordingly, the Department approves the Company's proposed expenditure level for its 1995 DSM programs, subject to the directives, below, regarding the deferral of approval for four programs deemed to be non-cost-effective by the Company.

C. Residential Programs

1. Introduction

The Company has requested approval of the continued implementation of the High Use/Electric Heat Program and deferral of approval for the Residential Efficient Lighting,

Multifamily Electric Efficiency; Public Housing Authority/Boston Housing Authority, and Home Energy Rebate Programs (Exh. BE-39). The Company has proposed to terminate implementation of the Energy Fitness Program, claiming that the program has achieved its objectives, has reached the targeted market for which it was designed, and in addition, is no longer cost-effective (Exh. DPU-1, at 1).

2. High Use/Electric Heat

a. Description

The High Use/Electric Heat ("High Use") Program provides heating, cooling, lighting, and water heating measures to customers in houses of one-to-four units whose electricity usage is considered by BECo to be high (Exh. BE-1, Att. 3, at 9). The program is marketed through bill inserts, newspaper and radio advertising, telemarketing, and direct mail (id.). As a design change for this program, the Company indicated that it was proposing a customer contribution equal to one year's worth of energy savings on all measures for all participants in this program (Exh. DPU-1, Att. 2). The Company made no provision in its program design to allow a reduced customer contribution for low-income customers or for renters who pay their own heating bills (Tr. 2, at 46-48). The Company stated that it would be difficult to implement a program with different levels of contribution requirements for different types of customers, where some customers would have to disclose their income levels in order to receive a lower customer contribution rate (id. at 51-52). In response to a Department record request, the Company developed an estimate of participation and budgets assuming a customer contribution equal to two-years' worth of energy savings for owner-occupants, and no customer contribution from

renters or low-income customers (DPU-RR-18). Under this scenario and keeping the total budget at the same level as initially proposed, the Company stated that participation would drop from 1,610 units to 1,373 units; total administrative costs would increase, because of an increase in marketing costs, from $424,403 to $438,133; and total rebates would decrease from $1,466,213 to $1,452,467 (id.). The redesign assumes a low-income participation rate of 5 percent and a renter participation rate of 21 percent (id.).

In its 1995 Conservation Filing, the Company projected 1,610 participants in this program in 1995, with a budget of $1,890,616 (Exh. BE-1, Att. 1). The Company projected annualized energy savings of 4,329,650 KWH and summer peak demand savings of 196 KW (id., Att. 2). In its Record Update, these savings and cost estimates yield a net benefit of $536,170 and a benefit/cost ratio of 1.25 (Exh. BE-39).

b. Analysis and Findings

The Department has established two goals that companies should strive to achieve when implementing DSM programs: (1) maximize penetration in order to obtain as much cost-effective DSM as possible; and (2) design programs so as to minimize company costs. Western Massachusetts Electric Company, D.P.U. 89-260, at 38 (1990) ("D.P.U. 89-260"); see D.P.U. 86-36-F at 18-20 (1988). In recent orders, the Department has encouraged electric companies to structure DSM measure rebate levels so that customer contributions would reduce the rate impact on non-participants, while not significantly reducing participation in a company's program. Massachusetts Electric Company, D.P.U. 92-217, at 7 (1993) ("D.P.U. 92-217"); Western Massachusetts Electric Company, D.P.U. 92-13, at 11 (1992) ("D.P.U. 92-13"). In

addition, the Department has held that, in designing their DSM programs, electric companies should pay particular attention to hard-to-reach sectors such as rental housing and low-income customers. D.P.U. 86-36-F at 26.

The Company provided no evidence to suggest that tenants and low income customers in its service territory would be likely or able to pay the required customer contribution in the Company's proposed program -- in fact, the Company did no analysis at all of these two segments of its customer population when adding this component to its program design. The Department notes that the low income customers most likely would not have the means with which to participate, and the tenants most likely would not have the motivation to pay for major installations in a home which they did not own. Consequently, the Department finds that the Company's design for the High Use Program would effectively bar participation in this program by low-income customers and by tenants in houses of one-to-four units. Therefore, the Department rejects the customer contribution component of this program and directs the Company to implement the program according to the redesign submitted in response to DPU-RR-18, while ensuring that the program remains cost-effective. Accordingly, the Department directs the Company to submit projections of customer participation levels, recalculated energy and demand savings estimates, and the associated net benefit and benefit/cost ratio, in a compliance filing to this Order, based on this redesign.

3. Deferred Programs

a. Description

The Company has requested deferral of approval for the Residential Lighting, Multifamily,

Public Housing Authority/Boston Housing Authority, and Home Energy Rebate Programs until BECo can redesign them to become cost-effective without consideration of environmental externalities, and has proposed to submit them to the Department for review and approval within 30 days of the issuance of this Order (Exh. BE-39).

The Company has not indicated its preference for Department treatment of its residential programs in the interim, i.e., in the time between issuance of this Order and the time that newly designed, more cost-effective programs could be implemented, nor has the Company proposed a cost recovery scheme for this interim period.

b. Positions of the Parties

CLF and the Attorney General stated that they have no objection to the Company's proposal to defer approval, so long as they have the opportunity to participate in the Department's review process, and, in particular, the Company's decision to accord zero value to the benefit of avoiding environmental externalities when calculating cost-effectiveness (CLF Response to Company Motion at 2; Attorney General Response to Company Motion at 1). In a further response to the Company's proposal, the Attorney General asserts that BECo's decision to eliminate entirely any consideration of environmental externalities in its cost-effectiveness assessments is not only contrary to the decision of the SJC, but also violates the requirements of Massachusetts law (Attorney General Response of January 20, 1995). The Attorney General requests that the Department require BECo to assign specific externality values for environmental benefits resulting from each DSM program proposed, and that the Department review these values when reviewing the redesigned programs for the residential sector (id.).

c. Analysis and Findings

The question of the validity of the Department's applied, monetized environmental externality values was recently and definitively addressed by the Supreme Judicial Court. Massachusetts Electric Company v. Department of Public Utilities, 419 Mass. 239 (1994). The Court's opinion will likely affect a number of programs under way at public utility companies, including BECo. Accordingly, the Department takes the opportunity presented by BECo's proposed treatment of its Category III programs to respond to the Court's direction to it.

The Court determined that the Department, as a ratesetting agency, has authority to require utilities to consider "reasonably anticipated" or "foreseeable" environmental requirements in resource procurement where those foreseeable future environmental requirements affect costs to ratepayers qua ratepayers. The Department "has regulatory authority over an electric utility's rates, and reasonable costs to be incurred in protecting the environment, whether mandated or voluntary, may be reflected in a utility's approved rates." Id. at 246. Thus, by inference, it would be appropriate to consider in the resource selection process whether particular resources have environmental compliance or similar costs associated with them.[5] On the other hand, the Court rejected the Department's independent attempt to impose its own externality values in the interest of protecting society at large from costs not already internalized by the environmental statutes, environmental agency regulations, and decisional law of the courts, whether state or Federal. Id. at 243, n.4, 244, 250.

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[5] For example, the relation between tradeable emissions permits and DSM programs would be a reasonable point to consider in resource procurement. Avoidance of costs of possible noncompliance fines from operation of certain types of power plants may be another useful point to consider.

"[A]s a matter of legal principle," authority to protect the environment resides in the legislature and those agencies to which authority is explicitly delegated, and not in the Department. Id. at 246-47. When weighed against the express and systematic delegation of authority to environmental agencies and against the Court's holding in Massachusetts Electric, arguments in favor of retaining externality values, such as those recently challenged, based on general regulatory authority or even on such general language as in G.L. c. 164, § 69I, are unpersuasive.

Accordingly, consonant with the Court's recent opinion, the Department will no longer impose on the utilities' resource procurement process the values established in D.P.U. 89-239 and D.P.U. 91-131 and will entertain a filing from BECo that reflects the holding of Massachusetts Electric in any reassessment of BECo's Category III DSM program design. BECo is obligated, as a matter of management responsibility and function, to judge the value of a resource to serving its customers. The Department, in turn, will evaluate the soundness of the Company's case.

One point merits reiteration, however. Although the Department will no longer impose monetized externality values on resource procurement decisions, the Department will continue to insist that reasonably foreseeable environmental control requirements with cost implications for ratepayers be considered by utilities in weighing resource procurement alternatives. Id. at 246.

D. Commercial/Industrial Programs

1. Introduction

The Company has proposed continued implementation of four commercial/industrial ("C/I") conservation programs in 1995: C/I New Construction/Remodeling; Small C/I Retrofit;

Large C/I Retrofit; and C/I Equipment Replacement Programs, although the only program in which the Company proposes to allow new participants in 1995 is the Small C/I Program (Exh. BE-1, Att. 3, at 11-20; Tr. 1, at 137). The Company also proposed continued implementation of two load management programs: Boston Edison Energy Cooperative; and Generator Assistance Program (Exh. BE-1, Att. 3, at 21-24). The Company also proposed to continue payments pursuant to ongoing contracts for prior-year installations of DSM measures in the Energy Conservation Retrofit Program ("ENCORE") (id. at 25-26).

2. ENCORE

The ENCORE Program is a performance contracting retrofit program that installed all cost-effective energy efficiency measures, including lighting, motors, and heating, ventilation and air conditioning ("HVAC"), in the facilities of C/I customers with a monthly billing demand of greater than 150 KW (Exh. BE-1, Att. 3, at 25). The ENCORE Program was implemented between 1986 and 1993, although no new participants were accepted after 1991 (id.).

The Company proposed a budget of $6,864,500 to support ongoing contract payments to C/I customers who participated in this program during the years of its implementation (Exhs. BE-1, Att. 1; BE-3, at 12). Savings projections are cumulative from all years of implementation; energy savings estimates are 61,102,321 KWH, and summer demand savings estimates are 13,852 KW (Exh. BE-1, Att. 2). Because no new installations are projected for the ENCORE program in 1995, no net benefit or benefit/cost ratios were calculated (id.).

Consistent with the Department's precedent to allow a company to meet prior commitments to customers for DSM installations (see Cambridge Electric Light

Company/Commonwealth Electric Company, D.P.U. 91-80, Phase II-A at 142), the Department approves the budget for the ENCORE Program for 1995 to allow payments to be made in fulfillment of contract obligations incurred by the Company from 1986 through 1993.

3. C/I Lost Opportunity Programs

a. Description

The C/I New Construction/Remodeling Program is a lost opportunity program that was designed to pay for the incremental cost of energy-efficient lighting, HVAC, motors, commercial refrigeration, water heating, cooking, industrial process equipment and other electrical equipment, or for the extra cost of construction for energy-conserving architectural details, at the time a building is being constructed or renovated (Exh. BE-1, Att. 3, at 11).

The Company projects only six participants in the C/I New Construction/Remodeling Program in 1995, with a budget of $5,667,879 (id., Att. 1). The Company projects annualized energy savings of 6,142,860 KWH and summer peak demand savings of 1,698 KW (id., Att. 2). In the Record Update, these savings and cost estimates yield a net benefit of $842,910 and a benefit/cost ratio of 1.2 (Exh. BE-39).

The Equipment Replacement Program is a lost opportunity program designed to increase the energy efficiency of electrical equipment in C/I buildings through the replacement of less efficient equipment, including lighting, HVAC, motors, commercial refrigeration, water heating, cooking, industrial process equipment, and other electrical equipment, at the time the equipment is normally being replaced by a customer (Exh. BE-1, Att. 3, at 18). The Company funds the incremental cost to customers for the purchase of more efficient equipment (id.). The Company

projects two participants in the Equipment Replacement Program in 1995, with a budget of $914,690 (id., Att. 1). The Company projects annualized energy savings of 959,090 KWH and summer peak demand savings of 241 KW (id., Att. 2). In the Record Update, these savings and cost estimates yield a net benefit of minus $304,000 and a benefit/cost ratio of 0.61 (Exh. BE-39).

Both lost opportunity programs were marketed in a myriad of ways until implementation was suspended because, according to the Company, they were "fully subscribed," although BECo reduced the budget for the Equipment Replacement Program for 1995 by 72 percent from the 1994 spending level (Exhs. BE-1, Att. 3 at 11 and 18; DPU-17).

In response to a CLF record request, the Company acknowledged that 21 customers had expressed interest in participating in the C/I New Construction/Remodeling Program, but were not permitted to by the Company, at the time the program was closed to new participants, and that the Company has not kept a record of the number of requests to participate since that time (CLF-RR-4).

Despite the fact that the Equipment Replacement Program is no longer cost-effective using the Company's revised cost-effectiveness analysis, the Company requests approval to implement the program at the originally proposed level in 1995, stating that it has made commitments to its customers that must be met (Exh. BE-39). If the Company decides to open this program to new participants in 1995, BECo would redesign it to be more cost-effective (id.).

b. Positions of the Parties

i. CLF

CLF contends that the Company's decision to reduce its DSM expenditures in 1995, and

most especially to curtail participation in lost opportunity programs[6] such as the C/I New Construction/Remodeling and Equipment Replacement Programs, violates the Department's mandate that requires electric companies to avoid lost opportunities for energy savings to the maximum extent possible (CLF Brief at 2-3). In support, CLF cites the Department's standards, codified in 220 C.M.R. § 10.02, that state that a lost DSM opportunity results from a utility's "failure to take steps necessary to capture cost-effective [DSM] savings at the time when it is most practical and inexpensive to do so, such as the point when a building is first constructed or when a customer's energy consuming equipment is replaced" (id.). CLF states that "the Department has emphasized the importance of making DSM investments at these times because, once a building is completed or equipment is replaced, `it is typically uneconomical to retrofit [DSM] measures,' and the efficiency opportunity is then permanently lost" (id. at 3, citing D.P.U. 86-36-F at 25).

CLF further states that BECo's programs are heavily weighted toward retrofit programs, and that only 18.5 percent of the C/I budget and 7.7 percent of the savings are projected to come from the C/I New Construction/Remodeling Program, and that only two percent of expenditures and 1.2 percent of the projected savings in the C/I customer sector are projected to come from the Equipment Replacement Program (id. at 3-4). CLF argues that the budget levels, estimates of savings, and projected participation levels for these programs represent a "wholly inadequate

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6 In its brief, CLF refers to lost opportunity programs such as the C/I New Construction/Remodeling Program and the Equipment Replacement Program as "market driven" programs; i.e., those "efficiency programs that rely on market forces and natural equipment replacement cycles to initiate improvements of customer buildings, facilities and energy consuming equipment" (CLF Brief at 1).

effort to minimize lost opportunities in the commercial/industrial sector" (id.). In addition, by proposing to serve only eight customers in 1995 who were previously committed to participate, and by closing the programs to any new participants, the Company's action already has caused significant lost opportunities, according to CLF (id.). CLF also states that BECo "can hardly claim to satisfy the requirement to `avoid lost [DSM] opportunities ... to the maximum extent possible' ... at the same time it has foreclosed new participation for the entire year in market driven programs serving its largest class of customers" (id. at 4-5).

CLF quotes a Company witness as conceding that closing these programs "[p]robably" would "create permanent lost opportunities" (id. at 5, citing Tr. 3, at 3-16). CLF did not make a specific recommendation regarding the size of the increase in expenditures it would propose for these programs,[7] but stated that all or a substantial portion of the Small C/I Retrofit Program budget of $4,163,740 could be reallocated to lost opportunity programs (id. at 10-11).

ii. The Company

The Company responds to CLF's arguments by contending that CLF's single focus in this case is to have the Company spend more money in 1995 than it has proposed (Company Reply Brief at 19). The Company argues that CLF has discussed budget targets for the lost opportunity programs in isolation and without considering the myriad factors necessary for proper planning (id.). The Company states that it closed the lost opportunity programs to its large C/I customers because it made the decision to stop amortizing DSM expenses while addressing the need to

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[7] CLF contends that it was unable to calculate precisely the amount of money available to restore to these program budgets because the Company failed to revise several pertinent information requests after discovering an error in its calculation of amortization effects (id. at 9-10).

maintain rate stability (id. at 19-20). The Company states that the proposed levels strike the appropriate balance between budget levels, further amortization of costs, and rate continuity (id. at 22).

BECo further argues that the Company should be applauded for improving the cost-effectiveness of the lost opportunity programs by increasing savings at a greater rate than the rate of increase in costs (id. at 21). The Company also states that, in terms of the size of the market sector reached by the C/I New Construction/Remodeling Program, it will serve a larger market share on a square-footage basis than would have been served had the target market share in effect for 1994 remained in effect for 1995 (id. at 21-22). The Company does not specifically address the issue of closing the Equipment Replacement Program and the effect this action will have on increasing lost opportunities in BECo's service territory.

In addition, BECo states that 1995 is a transition year to IRM implementation of DSM programs and, although the Company's decision to close these programs will create lost opportunities, BECo believes that it has struck a proper balance among all of its concerns (id. at 20). In response to a Department information request, the Company stated that if programs obtained through the IRM process could not be implemented beginning in April 1996, BECo might reopen the currently closed C/I programs (Exh. DPU-91).

The Company also contends that CLF's analysis of the available money to spend on lost opportunity programs was flawed, and that a budget increase for these programs of only $1.5 million in 1995 would bring spending in line with that of 1994 (Company Reply Brief at 20, citing Exh. DPU-17). BECo argues that CLF has based its proposal on what it terms "acceptable rate

impacts," but the Company does not find them acceptable (id.). Finally, the Company also contends that there is no record evidence that market transformation strategies, as proposed by CLF, are more cost-effective than traditional DSM programs (id. at 20-21).

c. Analysis and Findings

The Department's policy and precedent regarding lost opportunity programs are well-established. In D.P.U. 86-36-F, the Department stated that

> programs should be designed to capture all potential lost opportunities for [DSM]. A lost [DSM] opportunity results from the failure to take steps necessary to capture cost-effective [DSM] savings at the time when it is most practical and inexpensive to do so, such as at the point when a building is first constructed or when a customer's equipment is replaced.... Once the building or equipment has been installed, it is typically uneconomical to retrofit [DSM] measures, and the [DSM] becomes, thus, a lost opportunity.

Id. at 25. The Department has reiterated this policy in numerous DSM preapproval cases. D.P.U. 90-261, at 48; D.P.U. 89-260, at 50; Massachusetts Electric Company, D.P.U. 89-194/195, at 142 (1990).

In a recent order, the Department stressed an electric company's ongoing responsibility to manage prudently its DSM programs in light of circumstances existing and knowledge available at any particular time, and to make any adjustments to those programs that would be consistent with a company's obligation to provide least-cost service to its ratepayers. D.P.U. 92-217-A at 6. The Department also stated that, acknowledging that the level of competition in traditionally regulated industries may change, there may be a greater need for companies to be able to adapt to new circumstances and to respond to new opportunities on a more timely basis than could be accommodated under current procedures. D.P.U. 92-88-A at 14.

BECo has closed the C/I New Construction/Remodeling and the Equipment Replacement

Programs to new participants in 1995. The Company asserts that it took many factors -- especially rate impacts -- into account when it made the decision to curtail implementation of this program. The Company also asserts that the projected square footage to be treated in the C/I New Construction/Remodeling Program during 1995 exceeds that which would have been treated had the target market share from 1994 been retained for 1995.

In response to a letter from the State Division of Capital Planning and Operations of the Executive Office of Administration and Finance that was triggered by the Company's decision to limit participation in the C/I New Construction/Remodeling Program to "existing commitments," the Department wrote to the Company on July 22, 1994 to express concern with the Company's decision while acknowledging the Company's obligation to manage its DSM programs and budgets cost-effectively. The Department finds that BECo should use its discretion when making decisions such as the appropriate level of funding for various types of DSM programs that will have an impact on rates and that will be affected by the uncertainties inherent in a more competitive marketplace. In conclusion, the Department approves the level of program activity for the C/I New Construction/Remodeling and Equipment Replacement Programs proposed by the Company.

4. Small C/I Retrofit

a. Description

The Small C/I Retrofit ("Small C/I") Program provides energy efficient electric measures, including lighting, HVAC, commercial refrigeration, water heating, cooking, and processes, to customers with a peak demand of 150 KW or less (Exh. BE-1, Att. 3, at 13). The program is

marketed through personal customer contact, customer referrals, referrals from various departments within BECo, outreach programs, and trade organizations (id.). For 1995, the Company proposed increasing the customer contribution from the value of one-year's worth of energy savings to the value of three-years' worth of energy savings, or approximately 50 percent of the average project cost (Exh. DPU-1, at 2). The Company supported its decision to increase the customer contribution to this level by citing a study it had commissioned entitled "Interest in DSM Programs and Energy Efficient Electric Equipment among Boston Edison's Commercial and Industrial Customers" (id. at 4). This study indicated that at least 40 to 50 percent of respondents would find a three-year payback acceptable for retrofitting the types of measures found in their facilities (id.). The Company will offer financing to any small C/I customer who requests it to participate in the program (Tr. 2, at 8). The Company anticipates a strong level of participation in this program despite the imposition of an increased customer contribution requirement (Exh. DPU-1, at 4).

The Company projects 756 participants in this program in 1995, with a budget of $4,164,155 (Exh. BE-1, Att. 1). The Company projects annualized energy savings of 7,202,410 KWH and summer peak demand savings of 1,687 KW (id. Att. 2). In the revised filing, these savings and cost estimates yield a net benefit of $646,620 and a benefit/cost ratio of 1.10 (Exh. BE-39).

b. Analysis and Findings

The Department has established two goals that companies should strive to achieve when implementing DSM programs: (1) maximize penetration in order to obtain as much cost-effective

DSM as possible; and (2) design programs so as to minimize company costs. See D.P.U. 86-36-F at 18-20. In a recent order, the Department encouraged electric companies to structure DSM measure rebate levels so that the customer contribution would lower the rate impact on non-participants, while not significantly reducing participation in a company's program. D.P.U. 92-217, at 7. The evidence presented in this case supports the Company's decision to increase the customer contribution level in the Small C/I Program to the value of three-years' worth of energy savings to the customer. Therefore, the Department approves the proposed change.

5. Large C/I Retrofit Program

a. Description

The Large C/I Retrofit Program provides energy efficient electric measures, including lighting, HVAC, commercial refrigeration, industrial process equipment, and comprehensive technical assistance to customers with a monthly peak demand greater than 150 KW (Exh. BE-1, Att. 3, at 15). BECo stated that the program was "fully subscribed" for 1995, so no marketing is currently being carried out (id.). If the program were opened to new participants because programs were not implemented pursuant to IRM beginning in April 1996, the Company would propose a customer contribution of three-years' worth of energy savings beginning in 1995 -- an increase from the current level of two-years' worth of savings (Tr. 1, at 144-145). The Company stated that market research performed for BECo indicated that a three-year payback level would not discourage participation by the Company's large C/I customers (id. at 146-148).

The Company projects eleven participants in this program in 1995, with a budget of $12,959,520 (Exh. BE-1, Att. 1). The Company projects annualized energy savings of 4,056,640

KWH and summer peak demand savings of 887 KW (id., Att. 2). In the Record Update, these savings and cost estimates yield a net benefit of minus $125,610 and a benefit/cost ratio of 0.97 (Exh. BE-39). Despite the fact that this program is no longer cost-effective, according to the Company's calculation which provides a zero value for the avoidance of environmental externalities, the Company proposed to meet existing commitments and to implement the Large C/I Retrofit Program at the originally proposed level in 1995 (id.). The Company stated that in order to reopen this program to new participants, it would have to be redesigned to make it cost-effective (id.).

b. Analysis and Findings

In accordance with the Department's policy to allow electric companies to meet prior commitments to customers made under the assumption that a program was cost-effective (D.P.U. 91-80 Phase II-A at 142), the Department approves the Company's proposal to implement the Large C/I Retrofit Program in 1995 to the extent necessary to meet these commitments.

Regarding the Company's proposal to increase the customer contribution level in the Large C/I Retrofit Program, the Department encourages electric companies to structure rebate levels so that the customer contribution would lower the rate impact on non-participants, while not significantly reducing participation in a company's program. D.P.U. 92-217, at 7. The record supports the Company's decision to increase the customer contribution level for large C/I customers in this program. Accordingly, the Department approves the Company's proposal to increase the customer contribution for this program to three years' worth of savings, should the

Company open the program to new participants.

6. Load Management Programs

a. Description

The Company has proposed to implement in 1995, at a maintenance level, two load management programs: the Boston Edison Energy Cooperative ("BEEC") Program and the Generator Assistance Program ("GAP") (Exh. BE-1, Att. 3, at 21-24). BEEC is a dispatch load management strategy, designed to reduce BECo's demand at peak periods, that involves large C/I customers reducing load at the Company's request in exchange for an incentive payment of $10 per KW during certain months of the year (id. at 21). There are currently 20 customers in the program, and marketing efforts are limited to keeping these customers as participants (id.).

GAP is a load management program under which customers are paid an incentive of $10 per KW during certain peak months to supply a portion of their own load (id. at 23). Participating customers use their own, on-site generators with more than 50 KW of connected load, which can be shifted off the BECo system (id.). Marketing efforts are limited to maintaining current participants in the program (id.).

The Company projects 20 participants in the BEEC Program, with a budget of $386,962 (id., Att. 1). The Company projects 61,760 KWH of annualized energy savings and 8,382 KW of summer peak demand savings for the program in 1995 (id., Att. 2). In the Record Update, these savings and cost estimates yield a net benefit of $3,862,240 and a benefit/cost ratio of 2.15 (Exh. BE-39). The Company projects seven participants in the GAP, with a budget of $107,088 (Exh. BE-1, Att. 1). The Company projects 10,303 KWH of annualized energy savings and

1,398 KW of summer peak demand savings in 1995 (id., Att. 2). In the Record Update, these savings and cost estimates yield a net benefit of $275,120 and a benefit/cost ratio of 1.3 (Exh. BE-39). The cost-effectiveness calculation was based on an analysis of a ten-year period, since the Company stated that these programs would not be cost-effective on a one-year basis (Exh. BE-1, Att. 2).

b. Analysis and Findings

The Department approved implementation of these two load management programs at a maintenance level in D.P.U. 91-233, so that when there is a need for capacity, or when BECo needs to curtail its load to respond to an unusually high peak situation, BECo will have the capacity resources available at a low cost to its ratepayers. As the Department stated in D.P.U. 91-233-D at 47, the Department recognizes that

> expenses incurred to maintain a load curtailment program in readiness are appropriate, as long as the program is cost-effective compared to other ways of meeting potential peak loads, and as long as there is a significant likelihood that peak loads requiring curtailment will occur.

The record indicates that the BEEC and GAP load management programs proposed for implementation by the Company in 1995 remain cost-effective. Accordingly, the Department approves the Company's proposal to implement these two programs.

E. Conservation Voltage Regulation

The Company provided a status report on the implementation of its Conservation Voltage Regulation ("CVR")[8] Program[9] that was first preapproved by the Department in D.P.U. 90-335

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[8] The Company uses the term "Conservation Voltage Reduction" when describing its program; however, the Department adopted the term "Conservation Voltage Regulation" to reflect the fact that proper application of this program will not reduce customer

(Exh. DPU-152). The status report indicated that the Company was continuing to implement the CVR Program according to a schedule submitted to the Department on February 1, 1993, with some modifications that were based on the results of implementation to date (id.). The Company also indicated that the budget and savings estimates provided in the 1995 Conservation Filing contained an error that BECo stated it would correct (id.). The Company projected a budget for CVR in 1995 of $959,490, annualized energy savings of 31,530,500 KWH, and summer peak demand savings of 2,905 KW, yielding a net benefit of $15,603,920 and a benefit/cost ratio of 17.26 (Exh. BE-39).

The Department has recognized the benefits of CVR implementation on an electric company's system. D.P.U. 90-335, at 78-79. The Department has stated that a properly implemented CVR program should maintain service voltages within existing standards; not result in any customer inconvenience; provide a cost-effective energy resource; result in longer useful lives for appliances, because they operate more efficiently at lower voltage levels; and result in decreased energy bills for all customers with regulated voltage. Id. at 78. The record documents that BECo's CVR Program remains extremely cost-effective and is being implemented in accordance with prior Department directives. Accordingly, the Department approves the Company's request to continue to implement the CVR Program as proposed.

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voltages below presently accepted standards. D.P.U. 90-335, at 67.

[9] CVR involves a set of measures and operating strategies designed to provide electric service at the lowest practicable voltage level, and in a cost-effective manner, while meeting the standards for voltage adopted by the American National Standards Institute. CVR saves both energy and capacity by lowering the average voltage used by customers. D.P.U. 90-335, at 67.

F. Market Transformation Strategies

1. Introduction

In this proceeding, CLF has sponsored the testimony of two witnesses, Chris Robertson and David Hewitt (Exhs. CLF-1, CLF-2). Messrs. Robertson and Hewitt presented testimony discussing the concepts and methods to exploit market driven and market transformation opportunities[10] for DSM in the C/I and residential markets, respectively (id.).

Mr. Robertson advocates (1) making the Company's Commercial Chiller Replacement Pilot Program[11] available to all eligible customers; (2) rebates and technical assistance for commercial customers to replace standard equipment with high-efficiency versions; (3) participation by BECo in regional and national initiatives to stimulate the manufacture and distribution of high efficiency equipment; (4) participation by BECo in efforts to upgrade and enforce state energy building codes; (5) participation by BECo in efforts to upgrade energy efficiency standards for appliances; (6) expansion of efforts by BECo to train people involved in the distribution, installation, design and financing of energy-consuming equipment in energy efficient alternatives; (7) provision of customer assistance and education materials regarding the efficient use of electricity; and (8) placement of priority by BECo on market driven and market transformation strategies (Exh. CLF-2, at 5-6).

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[10] Market transformation programs, according to CLF, are those where utility intervention creates permanent changes in market practice and or products, resulting in substantial improvements in the energy efficiency of products and services (Exh. CLF-1, at 3).

[11] The Chiller Conversion Program seeks the replacement and resizing of chiller equipment with high-efficiency versions when current models either end their useful, economical life or during refrigerant conversion pursuant to the Clean Air Act (Exh. CLF-2, at 11).

Mr. Hewitt recommends that BECo implement market transformation strategies for the following end-uses in residential dwellings: windows; water heaters; lighting fixtures and lamps; and space heat technologies (Exh. CLF-2, at 15-19). Mr. Hewitt also recommends that BECo take such efforts as are necessary to increase the efficiency requirement in state building codes and construction practices (id. at 19-20).

2. Positions of the Parties

a. CLF

CLF argues that the Department's standards on lost DSM opportunities "is clear and long-standing" (CLF Brief at 2, citing D.P.U. 90-335, at 26). CLF contends that the Department emphasized the importance of making DSM investments when a building is first constructed or when a customer's energy consuming equipment is replaced (id. at 3, citing 220 C.M.R. § 10.02). The Department made this pronouncement, CLF argues, in order to avoid lost opportunities because the retrofit of such DSM measures at a later time would be uneconomical (id. at 3, citing D.P.U. 86-36-F at 25 (1988)). See also Section II.D.3.

CLF asserts that BECo has missed the point when it argues that CLF's proposals are inconsistent with the Department's directive in D.P.U. 92-265 that the Company's subsequent DSM preapproval filing not include any new DSM programs unless competitively solicited and that CLF has failed to design detailed programs that include savings levels, budgets and time lines (CLF Reply Brief at 2-3). CLF argues that its witnesses do not propose that the Company abandon its existing DSM programs in favor of new ones. Rather, CLF contends, the witnesses recommend "an orderly transition" to market transformation strategies (id. at 3, citing Exh. DPU-

162, at 11).

CLF asserts that market driven and market transformation strategies are generally more economic than retrofit strategies, and that successful market transformation programs, in particular, would reduce the need for continued ratepayer investment in the long-term (id., citing Exh. DPU-162, at 8, 9). CLF contends that competitive solicitations were established in the IRM regulations as a means to achieve the Department's goal to "provide reliable electric service to ratepayers at the lowest total cost to society (id., citing 220 C.M.R. § 10.03(10)(a)). CLF argues that, while it is too soon to determine whether market transformation strategies can "achieve the goal of least cost service more effectively than current ["subsidiary"] DSM strategies and cannot be accommodated by these subsidiary strategies, then it is the subsidiary strategies that should change" (id. at 3-4).

CLF contends that the initial research and planning necessary to assess and develop market transformation strategies would not violate the limitation imposed in D.P.U. 92-265, nor would such preliminary activities be incompatible with the IRM process (id. at 4). CLF further argues that, to the extent its witnesses proposed shifting emphasis from retrofit to market driven programs, these efforts are already mandated by the Department (id.).

b. Attorney General

The Attorney General states that it supports the testimony of CLF's witnesses and argues that "market transformation efforts are especially timely because they would permit improved efficiency even in a restructured environment where utilities may be less active in DSM delivery" (Attorney General Brief at 17-18). The Attorney General recommends that the Department

require the Company to take steps to develop and implement market transformation strategies (id. at 18). The Attorney General adds that market transformation efforts are fundamentally different from traditional DSM and should not necessarily be eligible for LBR treatment (id.). Instead, the Attorney General argues, some incentive adjustment should be made to reflect a company's contribution in developing and implementing market transformation (id.).

c. The Company

The Company argues that it has supported market transformation efforts in the past, and that some of its DSM programs, both in the residential and C/I sectors, have created significant positive changes in the market (Company Brief at 40, citing Exh. DPU-73). The Company contends that CLF's recommendations regarding market transformation strategies, however, are problematic for a number of reasons (id. at 41).

First, the Company argues that market transformation strategies require an array of participants, including all gas, electric and water utilities, contractors, engineers, state agencies, and many others (id. citing Exh. DPU-162, Att. 1, at 135-137). Second, the Company asserts that CLF has not provided necessary information such as savings levels, budget estimates, implementation time lines, or benefit/cost information to compare these programs with others to determine if they would be, in fact, least cost alternatives for the Company and its customers (id., citing Tr. 4, at 65). Third, the Company argues that savings derived from the proposed strategies would be difficult to measure, and would require several years after the market transformation programs were in place before they could develop comprehensive and effective evaluation programs (id., citing Exh. DPU-162, at Att. 1, at 154-156). Fourth, the Company contends that

competitive bidding is not applicable to DSM programs that would implement market transformation strategies (id. at 42). Therefore, the Company argues, these programs would not meet the requirement of D.P.U. 92-265 that all new or expanded programs be subjected to competitive bidding, even during the interim period (id.). Fifth, the Company argues that the changes to its DSM programs proposed by CLF would be significant and would require more than two years to implement (id. at 42-43). Finally, the Company asserts that the program changes proposed by CLF would be "entirely inconsistent with the regulatory requirements imposed by the Department for continuity of DSM programs during this interim period" before new programs are implemented through their IRM proceeding (id. at 43).

3. Analysis and Findings

In D.P.U. 92-265, at 12, the Department stated that it would not expect any interim DSM filing prior to the Company's IRM filing to include any new or expanded programs, unless competitively solicited. The Department also is persuaded that the CLF proposal to implement market transformation strategies through BECo's DSM programs would be a significant undertaking and would require an extensive period of time to plan, implement, and measure. Therefore, the Department will not require the Company to implement the market transformation strategies proposed by CLF as part of the 1995 DSM program.

III. MONITORING AND EVALUATION OF SAVINGS ESTIMATES

A. Introduction

The energy and capacity savings estimates that are attributable to DSM programs are used by the Company and the Department for planning purposes and for determining the DSM

incentive and lost base revenue earned by the Company in a particular year. D.P.U. 91-233-D at 5. In order to serve these purposes, the impact evaluations must produce savings estimates that reflect (1) the period of time over which the ECMs can be expected to generate savings (i.e., "lifetime" savings estimates), (2) the level of demand savings that occurs at the time of, or coincident with, a company's peak power demand (i.e., "coincident" demand savings),[12] and (3) do not include the level of savings that would have occurred in the absence of implementation of the DSM programs (i.e., "net" savings estimates).[13] Id. at 5-6. To determine net savings estimates, gross savings estimates must be adjusted to take into account non-program factors that may affect the electricity consumption of program participants. Id. at 6. These factors include free-ridership,[14] economic conditions (both general and firm-specific),[15] weather, and spillover

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[12] Savings estimates that do not take into account the level of demand savings that occurs at the time of a company's peak power demand are referred to as "non-coincident" demand savings estimates. D.P.U. 91-233-D at 5, n. 12.

[13] Savings estimates that include the level of savings that would have occurred in the absence of implementation of the DSM programs are referred to as "gross" savings estimates. D.P.U. 91-233-D at 6, n. 13.

[14] A free rider is defined as a program participant who would have installed an ECM without direct payment from an electric company. D.P.U. 86-36-F at 25-26. A pure free rider would have spent the same amount of money to install the same energy-efficient measures at the same time without benefit of a utility company's program. A partial free rider would have spent less money, installed less equipment, installed only somewhat efficient equipment, and/or installed the equipment at a later date.

[15] Firm-specific economic conditions may include changes in floorspace, equipment, hours of operation, industrial process configuration, output, employment, and/or sales. D.P.U. 91-233-D at 6, n. 15.

(additional savings that are induced by a DSM program).[16] Id. See also D.P.U. 92-217-B.

B. Standard of Review

In D.P.U. 92-217-B, the Department introduced a new standard of review that would be applied to future impact evaluations.[17] Id. at 6. The Department stated that, in order for a company's DSM savings estimates to be accepted, the company must demonstrate that its impact evaluations are reviewable, appropriate, and reliable.[18]

An impact evaluation filing is considered reviewable if it is complete, clearly presented, and contains a summary that sufficiently explains all assumptions and data presented. An impact evaluation is considered appropriate if evaluation techniques selected are reasonable given consideration of the characteristics of a particular DSM program, the company's resources, and the available methods for determining demand and energy savings estimates.[19] Finally, an impact evaluation is considered reliable if the savings estimates included in the evaluation are sufficiently

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16 An adjustment can also be made for a "snapback" effect (an increase in electricity use financed by some of the money saved by an ECM). D.P.U. 91-233-D at 6, n. 17.

17 The Department notes that the standard of review discussed here applies specifically to the review of a company's DSM savings estimates. The ratemaking treatment to be afforded revenues that are calculated based on these savings estimates is addressed more appropriately in a Conservation Charge order.

18 In D.P.U. 92-217-B, the Department stated that this standard of review "reflects the criteria that have been established for the review of electric companies' demand forecasts. This is appropriate because, similar to electric demand forecasts, DSM impact evaluations employ input data and complex methodological techniques to develop assessments that are important to the utilities' resource planning processes and to ratepayer costs." Id. at 6.

19 The Department recognizes that the state-of-the-art in methods used to determine DSM savings estimates is evolving and expects companies to remain up to date with technological and methodological advances in this field.

unbiased and are measured to a sufficient level of precision, again, given consideration of the characteristics of a particular DSM program, the company's resources and the available methods for determining demand and energy savings estimates.

The Department previously has found substantial bias in engineering estimates of DSM savings and, accordingly, generally has required companies to measure savings after the installation of ECMs. Boston Edison Company, D.P.U. 90-335, at 106 (1992) ("BECo"); Nantucket Electric Company, D.P.U. 91-106/138, at 212-215 (1991); Massachusetts Electric Company, D.P.U. 90-261, at 79, 80, 85 (1991) ("D.P.U. 90-261"); Western Massachusetts Electric Company, D.P.U. 91-44, at 142-143 (1991) ("WMECo"). The Department has identified additional sources of bias in savings estimates, including: (1) poor selection of samples used in savings measurement analyses, WMECo at 138; (2) inaccurate hours-of-use estimates, BECo at 105; WMECo at 142; D.P.U. 90-261, at 109-110; (3) the failure to account for free riders, BECo at 111-112; (4) the failure to account for interactions of multiple DSM measure installations, Cambridge Electric Light Company and Commonwealth Electric Company, D.P.U. 89-242/246/247, at 78-79 (1990); and (5) overestimated persistence of savings. BECo at 110-111; WMECo at 147-148.

With respect to the precision of savings estimates, the Department recognizes that, in certain instances, the costs of obtaining more precise estimates of savings may exceed the incremental value of those more precise estimates. See D.P.U. 90-261, at 100. Therefore, the Department directs companies to pursue savings measurement activities that maximize the level of precision of the DSM savings estimates, but only to the extent that the marginal value of the more

precise savings estimates exceeds the marginal cost of obtaining the additional precision. See BECo at 100-103, 110; D.P.U. 90-261, at 106, 108.

C. Residential Programs

1. Multifamily Program

a. Program Description

The Multifamily Program was designed to promote energy efficiency services in multifamily buildings with five or more dwelling units (Exh. BE-3, Att. 19, at ES-1). The program targets building owners and managers, and the services are delivered by a primary contractor who subcontracts a portion of the actual installation work to secondary contractors (id.). Upon an expression of interest by a potential participant, the primary contractor arranges for an on-site technical assessment and the Company performs a preliminary audit to screen potential measures for cost-effectiveness (id.). Once the Company approves the work, the primary and secondary contractors complete the installation (id.). After installation activities are completed, the delivery contractor conducts a post-retrofit inspection, collects data on installed measures, and enters the data into BECo's program database (id.).

b. Evaluation Description

Evaluation of the Multifamily Program consisted of an implementation analysis, a process evaluation, on-site surveys, and an impact evaluation (Exh. BE-3, at 118-119). The Company presented final savings estimates for Multifamily Program installations in 1992 based on the analysis in the impact evaluation (id. at 122, 124, Att. 19, at 2-21). The Company presented preliminary savings estimates for the Multifamily Program installations in 1993 based on the

engineering estimates in the program database, technical assessments, and site visits to multifamily buildings in BECo's service territory that were treated by the Multifamily Program and others that were not treated by the program (id. at 128, Att. 19, at 3-2).

The impact evaluation of the 1992 installation consisted of a two-stage process (id. at 122). The first stage analyzed each building in the participant and non-participant samples to establish the relationship between monthly energy consumption and weather, in order to calculate weather-normalized energy consumption for a period of one year before and after program implementation (i.e., energy consumption during 1991 and 1993) (id.).

The second stage, applied only to the participant sample, involved an analysis of each building's energy consumption during 1992 (id.). The analysis employed, as explanatory variables, the expected savings based on the program database, divided into weather-sensitive and non-weather-sensitive measures, and information on the characteristics of the buildings (id. at 122, 123). The Company indicated that the regression coefficients on the expected savings could be interpreted as realization rates, which could be applied to the savings estimates in the program database for the population of participant buildings to produce an estimate of the program's gross savings (id. at 122).

The Company made two adjustments to gross savings estimates to calculate net savings estimates (id.). The first adjustment modified participant savings estimates based on the change in consumption (i.e., between the before and after periods) among the non-participant sample (id.). The second adjustment modified savings estimates based on surveys of participants and non-participants which indicated a ten percent free-ridership level among program participants (id.,

Att. 19, at 2-20).

The Company indicated that the M&E contractor for the Multifamily Program included the free-rider adjustment in the savings estimates to reflect the fact that participants were more likely to implement efficient measures on their own than were non-participants (Tr. 2, at 147).[20] The Company further indicated that, typically, for savings estimates that are based on the consumption of a non-participant sample, a free-rider adjustment is not made (id. at 148). The Company stated that, for this impact evaluation, there was enough information in the analysis for the M&E contractor to recommend the free-rider adjustment (id.). On brief, the Company proposes to remove the free-rider adjustment from the Multifamily Program savings estimates, in effect removing the ten percent downward adjustment from the savings estimates determined through the billing analysis (Company Brief at 37).

The impact evaluation indicated large variances, both positive and negative, between the initial savings estimates based on engineering estimates and the savings estimates developed through the impact evaluation (Exh. BE-3, Att. 19, at 2-15). The Company indicated that the variance may be due to the fact that the database savings estimates were calculated at the time of the initial audit "and may not reflect the measures that were actually installed" (Tr. 5, at 34).

Pursuant to a Department request, the Company reproduced the impact evaluation model with all measures (i.e., weather-sensitive and non-weather-sensitive measures) aggregated (Exh. DPU-97). The model produced results indicating greater confidence in the coefficient of the variable combining all measures (i.e., a higher T-statistic), but a poorer statistical fit between the

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[20] This phenomenon is commonly known as self-selection bias.

model overall and the data (i.e., a lower R-Squared value) than was produced by the Company's analysis (id.). The Company indicated that, in its belief, where there was a significant level of confidence in a coefficient (i.e., the T-statistic was greater than two in absolute value), the coefficient was generally reliable (Tr. 5, at 24).[21] The Company stated that it does not attempt to maximize the confidence in variable coefficients, or T-statistics, but rather, attempts to develop models where the coefficients are above a threshold value of two (id.).

The Company provided an additional analysis that applied the weather-sensitive and non-weather-sensitive realization rates from the 1992 impact evaluation to the 1991 installations, as required in the Department's Order in D.P.U. 91-233-D at 77 (DPU-RR-27). The analysis estimated that the Multifamily program installations during 1991 produced annualized energy savings of 1,275,000 KWH (id.). The Company indicated that no modification was made to the LBR and financial incentive components of the proposed 1995 CCs to reconcile the original and revised savings estimates for the Multifamily Program implementation during 1991 (Tr. 5, at 20).

In 1992, more than 2900 dwelling units in 33 buildings were treated through the Multifamily Program producing estimated annualized savings of 2,591,000 KWH (Exh. BE-3, Att. 19, at ES-1, ES-4). In 1993, the program treated 4,381 dwelling units in 29 buildings producing estimated annualized savings of 5,279,000 KWH (id. at ES-1, ES-5).

c. Analysis and Findings

In the Company's prior DSM M&E Order, D.P.U. 91-233-D at 75-76, the Department determined that the Company's savings estimates for Multifamily Program installations made

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[21] The Company's witness explained that T-statistics of less than two indicate that there is less than 90 percent confidence that the variable coefficient is not zero (Tr. 5, at 24).

during 1991 (1) did not properly reflect the different building types and end uses treated through the program, and (2) were biased because data was improperly excluded from the participant sample. In that Order, the Department directed the Company to recalculate the savings estimates for 1991 installations with the realization rates developed for the 1992 program implementation assuming that they were found to be statistically significant, and to reconcile the associated LBR and incentive amounts to be collected in 1995. Id. at 77.

In its filing in this proceeding, the Company excluded recalculated 1991 Multifamily Program savings estimates when calculating proposed CCs. The Company's response to DPU-RR-27 establishes that the Company revised savings estimates in accordance with the Department's directive. Therefore, the Department directs the Company to modify the LBR and incentive components of the proposed CCs associated with savings estimates in the Multifamily Program consistent with the revised savings estimates calculated in DPU-RR-27.

The record indicates that the impact evaluation model that was used to calculate gross and net savings estimates for this program employed as explanatory variables the expected savings based on the program database. The record also indicates that there were large variances between database savings estimates and savings estimates developed through the model. The Company gave as a possible reason for this discrepancy the fact that the database savings estimates were calculated at the time of the initial audit and might not reflect the measures that were actually installed. The Department finds that the Company's development of database savings estimates based on the initial audit may lead to bias in the reported savings estimates. The Department also finds that, because the record provides little indication of the level or direction of that bias, there

is no immediate need to adjust the savings estimates. The Department directs the Company, in future DSM program evaluations, to take all reasonable steps necessary to ensure that the engineering estimates are reliable, particularly where such engineering estimates are used to develop final savings estimates, such as statistically adjusted engineering ("SAE") models.

The record also indicates that the Company did not attempt to maximize the confidence in variable coefficients, or T-statistics, but rather, attempted to develop models where the coefficients were considered to be statistically significant (i.e., above a threshold value of two). The Department finds that, while there was a sufficient level of confidence in the coefficients of the Company's analysis, in future analyses, the Company should make all reasonable efforts to maximize the confidence (i.e., the T-statistic) of its variable coefficients as well as the R-squared values of the models employed.

Finally, on brief, the Company proposes to remove the free-rider adjustment from the Multifamily Program savings estimates. The record indicates that the M&E contractor applied the free-rider adjustment to the savings estimates to adjust for bias that reflects the fact that participants were more likely to implement these measures on their own than were non-participants. The Department finds that the free-rider adjustment was reasonable and necessary, and therefore, rejects the Company's proposal. Further, the Department directs the Company, in future DSM program evaluations, to make a specific determination as to whether a free-rider adjustment is necessary to account for self-selection bias.

For the purposes of this proceeding, the Department finds that the Company's Multifamily Program savings estimates that include the ten percent free-rider adjustment are sufficiently

unbiased and precise. Therefore, the Department accepts the 1992 Multifamily Program savings estimates for the purpose of this proceeding.

2. Residential Efficient Lighting

a. Description

In 1987, the Company began implementation of the Residential Efficient Lighting Program, which provides financial incentives to all residential customers to replace existing incandescent lighting with several types of efficient lighting (Exh. BE-1, Att. 3, at 1). To determine savings estimates for this program, the Company conducted a mail survey of a sample of participants[22] and installed lighting loggers in the homes of a subset of that sample (Exh. BE-3, Att. 9, at 9-10). The Company reported that the survey gathered information about hours of use, location of lamp in home, measure persistence, and the other types of bulbs used in the home (id. at 8-18). The Company also stated that the survey responses led to estimates for free riders, free drivers, snapback, and "snapforward" (id. at 19-20, 24).[23]

The Company stated that lighting loggers were installed on 150 lamps in homes of

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[22] The Company stated that 1,400 1992 and 1993 participants were sent an eleven page survey and a total of 488 usable completed surveys were returned to the Company (Exh. BE-3, at 77-78; Exh. BE-3, Att. 9, at 9). The Company stated that 6,194 households were excluded from the group of participants from which the sample was selected because they represent real estate developers or property management companies who presumably installed the equipment in rental units and common areas; the Company could not provide any further information regarding those participants (id. at 9; Tr. 5, at 3-5).

[23] The Company describes "snapforward" as the tendency of participants to operate inefficient lamps less than before the installation of compact fluorescents since the compact fluorescents are less expensive to operate (Exh. BE-3, Att. 9, at 24). The average snapback effect of seven percent was reduced by the snapforward rate (2.2 percent) to reach the net snapback adjustment factor of 4.8 percent (id. at 24, 25).

99 survey respondents who volunteered to have the loggers installed (id. at 9, 22). The Company reported that steps were taken to ensure that logger data could be matched to survey data (id. at 22). The loggers recorded hours of use and metered usage was found to be only 79.7 percent of the self-reported usage (id.). The Company reported that, as part of the calculation of net savings, this factor was applied to the savings for the entire number of lamps and fixtures sold (id. at 22, 25-26).

The Company reported that adjustments for free-ridership and persistence were applied to the number of lamps and fixtures sold to reach the actual number of lamps and fixtures for which savings could be counted (id. at 18-19). The Company stated that survey results revealed that 18.6 percent of respondents were free riders (including partial free riders) and that 2.2 percent were free drivers (id. at 19-20). Therefore, the number of lamps and fixtures used to calculate savings estimates was reduced by a net adjustment factor of 16.4 percent (id. at 25-26). The Company further reduced the number of lamps and fixtures used to calculate savings estimates by 27.6 percent to reflect survey results showing that only 72.4 percent of lamps and fixtures were installed and in use (measure persistence adjustment) (id.).

The Company proposed annualized energy savings estimates of 10,239,310 KWH, and lifetime energy savings estimates of 71,675,170 KWH resulting from 1992 installations (Exh. BE-3, at 82). The Company proposed annualized savings estimates of 10,000,000 KWH, and lifetime savings estimates of 69,997,000 KWH resulting from 1993 installations (id. at 87).

b. Analysis and Findings

The record shows that the Company has developed estimates of energy and capacity

savings for the Residential Efficient Lighting Program based on after-the-fact measurement techniques such as extensive mail-in surveys and lighting loggers. The Department finds the Company's combination of an in-depth survey and end-use metering to be a commendable approach.

The Department previously has stated that a company's impact evaluation is considered reviewable if it is complete, clearly presented, and contains a summary that sufficiently explains all assumptions and data presented. D.P.U. 92-217-B at 6. The record shows that the Company failed to gather information on a large group of participants, 6,194 developers and property managers, and deleted them from the list from which the sample was chosen. Therefore, the Department finds that the Company's proposal for Residential Lighting Program savings estimates is not complete and thus, is not sufficiently reviewable. However, because the standard described above was set forth in D.P.U. 92-217-B, issued on May 20, 1994, the Company did not have adequate time to comply with this standard before the completion of its evaluation in July 1994. Therefore, the Department accepts savings estimates for the Residential Efficient Lighting Program as identified in the Company's filing but directs the Company to submit complete filings in the future.

D. Commercial and Industrial Programs

1. ENCORE

a. Program Description

Measure installation and technical assistance was provided primarily by energy service companies ("ESCos"), although some customers chose to install and maintain measures themselves (Exh. BE-3, Att. 1, at 1). For customers that chose to receive installation assistance,

BECo provided a list of three ESCos from which they could receive proposals (id.). Measures were evaluated for cost-effectiveness, and only those considered to be cost-effective were available for installation through the program (id. at 1-2). Most contracts between the ESCos and the Company have a life of ten years (Exh. DPU-58). Payments made by the Company to ESCos were based on documented energy savings and a percentage of the avoided costs attributable to the contracted energy savings (Exh. BE-3, Att. 1, at 1).

b. Evaluation Description

The Company used a regression billing analysis to develop savings estimates from the ENCORE program for 1992 and 1993 participants (id. at 339). Prior to conducting the billing analysis, the Company screened the data (id., Att. 1, at 65). Outlier data points for participants were identified for each month of the evaluation period, then adjusted to provide consistent data for each customer during the evaluation period (id.).[24]

To estimate net savings, a SAE model was used to compare the average daily customer pre- and post-participation energy use (id., Att. 1, at 64). Included in this model were data for 42 participants and 61 non-participants (id.). The model resulted in a realization rate of 85 percent with an adjusted R^2 value of 0.795 (Exh. BE-3 at 341-342). The Company indicated, however, that the precision of the net savings estimate was ±72 percent at the 90 percent confidence level (id. at 342). The Company stated that the wide confidence interval was due to the fact that the

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[24] The Company determined that an outlier is a circumstance where a participant's average daily usage changed by 30 percent or more from one month to the next without sustaining that change in the following month (Exh. BE-3, Att. 1, at 66). To correct for such an outlier, the Company used a combination of methods, including averaging data from the previous and following months to recalculate usage for the outlier month and replacing data from the outlier month with data from the same month in the following year (id.).

model aggregated customers treated through the program who happened to be heterogeneous in their energy consumption, and that the evaluation contractor applied "dummy" variables to account for the heterogeneity among the participants (Tr. 2, at 93-94).[25]

The Company calculated a free-rider adjustment based on surveys taken of program participants (Exh. BE-3, Att. 1 at 73-76). The Company indicated that only ten out of 45 total participants in 1992 completed the survey, and thus, the responses cannot be considered statistically significant (id.). The Company indicated that one reason the response rate to the surveys was so low was because the surveys required the time of a high-level manager, and that such managers may consider their time too valuable to spend on the completion of surveys (Tr. 5, at 71-72). The Company also indicated that many customers expect payment to participate in surveys, and that the Company expects some money for such payments to be made available during 1995 (id. at 72-73).

The Department investigated whether it would be appropriate to apply the free-rider rate developed through the Large C/I Program evaluation to the gross savings estimates for the ENCORE Program (id. at 75-91). The Company indicated that the different program designs and rebate structures make it inappropriate to apply the free-rider level from one program to the next (id. at 85). The Company also indicated that the 1992 Large C/I Program free-rider level is not applicable to the ENCORE Program because the school systems that were treated through the Large C/I Program in 1992 indicated high free-rider levels that the Company believes to be

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[25] The Company also indicated that, in the following year's evaluation of the ENCORE program, the contractor would use several sectoral models, as were used for the Large C/I Program, rather than the singular, aggregated model that was used for the current ENCORE evaluation (Tr. 2, at 94-95).

unrealistic (id. at 86).

BECo calculated savings for 1992 ENCORE Program participants at 29,220,088 annual KWH and 292,200,880 lifetime KWH (Exh. BE-3, at 347). The Company estimated savings for 1993 participants at 6,587,239 annual KWH and 65,872,390 lifetime KWH (id. at 351). The ENCORE Program represents over 40 percent of the total energy savings achieved in 1992 by all of the Company's DSM programs (id. at 30).

c. Analysis and Findings

The record indicates that, while the evaluation of the ENCORE program produced a wide confidence interval, indicating a lack of certainty in the results, the program treated a heterogeneous group of participants. The record also shows that the Company intends to utilize, in future evaluations of the program, different methods of analysis in order to account for the heterogeneity of the program participants.

The Department finds that, while the confidence interval of the model was not optimal, it was reasonable given the heterogeneity of the program participants.[26] Further, the Department finds that applying an alternative methodology will not improve the confidence in the results. Therefore, the Department will accept the Company's savings estimate for the 1992 ENCORE Program. The Department, however, directs the Company to take all reasonable steps necessary to evaluate the program with greater precision. In doing so, the Company should require

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[26] In D.P.U. 89-260, at 131, the Department adopted a standard for electric companies to produce savings estimates with a 90 percent confidence factor with a confidence interval of ± 10 percent. The Department later directed electric companies to seek the best precision (i.e., smallest confidence interval) "subject to the constraint that the marginal value of the precision attained should exceed the marginal cost of attaining it." D.P.U. 90-335, at 100.

program participants to provide the survey information necessary without which payment for energy savings will be withheld. The Company also should take all reasonable steps necessary to document the energy consumption of a non-participant sample that closely matches the program participants in average monthly energy consumption, seasonal adjustments to energy consumption, and daily load factor. Finally, the Company should consider the value of sectoral models, as planned, in its next evaluation of the ENCORE Program and other programs that target a heterogeneous customer base.

2. Large Commercial and Industrial Retrofit Program

a. Program Description

In 1990, the Company began implementation of the Large C/I Retrofit Program, which provides DSM services and incentives to customers with monthly billing demands greater than 150 KW (Exh. BE-3, at 284, Att. 2, at ES-1).[27] The program offers efficiency improvements for lighting, HVAC, industrial process equipment, and other measures (Exh. BE-1, Att. 3, at 15). The Company used different program incentives and payout arrangements for institutional and non-institutional customers (Exh. BE-3, at 284). [28]

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[27] The Company reported that several small facilities, including schools and municipal service buildings, were considered as a group to reach the combined 150 KW threshold (Exh. BE-3, at 284).

[28] For example, since financing was thought to be a problem for institutional or governmental customers, progress payments were paid to these customers during the construction period (Exh. BE-3, at 284). Also, only in 1993 did institutional or governmental customers begin to make a contribution toward the cost of the retrofits (id.).

b. Evaluation Description

The Company employed both engineering and econometric techniques to determine savings estimates for the participants in this program (Exh. BE-3, Att. 2, at 4-3). Individual billing analyses (econometric models) were tested for each of the five participants who were expected to save the most energy (id. 4-12). Model results for two of these five participants were used to determine savings estimates, while three of the five were found not to have adequate billing data to conduct the analysis (id. at 4-12, 4-35). Savings estimates for the latter three, accounting for approximately 53 percent of savings in this program, were developed by adjusting engineering estimates by simulation model results (id. at 4-31).

To develop savings estimates for participants other than the five largest expected energy savers, the Company divided participants into four groups for which regression analysis could be performed: (1) schools; (2) offices; (3) manufacturing; and (4) "other" (id. at 4-35, 4-38). For each of the first three groups, a model was developed using analysis of covariance (ANCOVA) techniques, yielding statistically significant results according to the Company (id. at 4-39 through 4-45). However, because of the heterogeneous nature of the "other" group, the Company did not attempt to develop an econometric model to determine savings estimates for this group; an overview engineering assessment was used instead (id. at 4-45).[29]

The Company reported free-ridership rates of 45.6 percent for institutional customers and 22.8 percent for non-institutional customers in 1992 (Exh. BE-3, at 288).[30] The Company stated

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[29] The overview engineering assessment was performed to determine realization rates that would form the foundation for the implementation analysis of 1993 participants (Exh. BE-3, Att. 2, at 4-45).

that both groups had a free-ridership rate of 16.2 percent in 1993 (id. at 288-289).

Two schools were not included in the school sector analysis, and for one of these, the Company chose to use a realization rate of 100 percent, stating that an individualized regression model was attempted but no reasonable model was found (Exh. BE-3, Att. 2, at 4-42).[31] The Company argued that savings estimates from HVAC systems are subject to less error because such systems, unlike lights, are more likely to be on automated controls (e.g., thermostats) and therefore, there is less uncertainty surrounding the hours-of-use estimates (DPU-RR-24). However, the Company acknowledged that the realization rate for schools was low, and that one reason for the low realization rate is that adequate adjustments were not made for changes in hours-of-use due to holidays, half-days, and other schedule changes (Tr. 2, at 117-118). The other school that was not included in the school sector analysis was one in which only an office was treated, and the Company chose to apply the office sector realization rate to that participant (Exh. BE-3, Att. 2, at 4-42, 4-45).

The Company identified seven facilities, other than the school described above, for which a regression analysis was not feasible, and where the Company chose to apply a realization rate of 100 percent (Exh. DPU-124). The Company indicated that the engineering estimates for these facilities were not revised (based on model simulation) because of their small size relative to the

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30 Free ridership rates were determined through participant surveys (Exh. BE-3, Att. 2, at 4-73). In 1992, the institutional free-ridership rate was heavily influenced by a single respondent who had decision authority for many facilities representing a large amount of savings (Exh. DPU-132).

31 The Company indicated that this was the only participating school with an HVAC measure and that only an HVAC retrofit was installed in this school (Exh. BE-3, Att. 2, at 4-42, Exh. DPU-124).

facilities that were ultimately analyzed in more detail (Tr. 2, at 121). In addition, the Company stated that savings estimates for the eight participants for which a realization rate of 100 percent was used account for less than 8 percent of expected savings for this program (DPU-RR-25).

Another facility that was analyzed separately was an office building that was only partially occupied (Exh. BE-3, Att. 2, at 4-83; Tr. 2, at 128-130). The Company reported that occupancy for this building was 60 percent in 1992 and 80 percent in both 1993 and 1994 and stated that the savings estimates would be adjusted accordingly (DPU-RR-26). The Company states that annualized program savings will be reduced by 0.7 percent and 1992 calendar year savings would be reduced by 6.9 percent for this program (Company Brief at 37).

The Company revealed that the reported savings estimates for one of the largest participants, identified as number 904402, were overestimated (Exh. DPU-123). The Company stated that it would reduce this customer's DSM-related savings and related LBR by 50 percent because the savings estimates were derived from engineering estimates, which do not take into account this customer's self-generation of a portion of its energy requirement (id.).

The Company proposed annualized energy savings estimates of 9,737,000 KWH, and lifetime energy savings estimates of 85,860,000 KWH resulting from 1992 installations of the Large C/I Retrofit Program (Exh. BE-3, at 300). The Company also reported demand savings estimates of 1,564 KW for the summer coincident peak and 1,636 KW for the winter coincident peak (id.). The Company stated that savings estimates for this program would be reduced by the amount of the error in the calculation of the savings estimates for the partially occupied building discussed above.

In order to determine first true-up savings estimates for 1993 installations of the Large C/I Retrofit Program, the Company reported that it applied results from the impact evaluation of 1992 participants, using a technique called ratio estimation (Exh. BE-3, Att. 2, at 5-1). The Company proposed annualized energy savings estimates of 22,027,000 KWH, and lifetime energy savings estimates of 194,227,000 KWH resulting from 1993 installations of this program (Exh. BE-3, at 306). The Company also reported demand savings estimates of 5,973 KW for the summer coincident peak and 6,248 KW for the winter coincident peak (id.).

c. Analysis and Findings

In conducting an impact evaluation of the Large C/I Retrofit Program, the record shows that regression analysis was not feasible for eight participants (including one school), and decided to use those participants' original engineering estimates (effectively a realization rate of 100 percent) for the final savings estimates for those customers. While the Company argues that the original engineering estimates for those eight participants are likely to be accurate (needing no realization rate adjustment), inadequate information is provided in the record to substantiate that claim.

The record includes specific information about the school with the HVAC retrofit, but again does not support the claim that actual savings resulting from this retrofit are accurately reflected in the original engineering estimates. The Company stated that one reason for the low realization rate for schools is that adequate adjustments were not made for changes in hours-of-use of the installed measures because of holidays, half-days, and other schedule changes. While the Company contends that the hours-of-use difficulties do not apply to an HVAC system because

such systems are controlled by thermostats, the Department finds that this is an insufficient argument for accepting the Company's savings estimates. Therefore, the Department directs the Company to recalculate savings for these eight customers based on the overall realization rate developed through billing analyses and adjusted engineering estimates for all customers.[32] The Department also directs the Company to reconcile all applicable incentives and LBR associated with these savings.

The record shows that one office building was partially unoccupied in 1992, 1993, and 1994.[33] The Department acknowledges the Company's intention, as indicated on brief, to adjust annualized program savings estimates by 0.7 percent and 1992 savings estimates by 6.9 percent for this program. However, the Company did not submit any support for these figures and, therefore, the Department directs the Company to submit the calculations which support these figures in a compliance filing to this Order.

In addition, the Department expects the Company to reduce DSM-related savings and related LBR for the self-generating customer discussed above by 50 percent because the savings estimates were derived from engineering estimates, which do not take into account this customer's self-generation (id.).

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[32] The Department notes that the eight participants whose savings estimates are in question here should not be included in the determination of the overall realization rate since no realization rate was developed for them.

[33] The partially unoccupied building is significant in this case because savings are overestimated when the savings associated with all installed measures are counted as if the building were fully occupied.

E. Conservation Voltage Regulation Program

1. Introduction

In D.P.U. 90-335, at 79, the Department directed the Company to implement all cost-effective CVR improvements on its system over a seven to eight year period (i.e., through the year 2000). In this proceeding, the Company requests recovery of $1 million of LBR in 1995 associated with the implementation of its CVR Program (DPU-RR-10, exh. 2, at 1). The Company indicated that it developed savings estimates by evaluating energy consumption data with and without the components of the CVR program activated (Tr. 1, at 90-91). The Company indicated that, while it has no formal documentation of the evaluation that has taken place thus far, it plans to do a thorough analysis of the program in early 1996 (id. at 91-94).

2. Analysis and Findings

The savings estimates obtained through the CVR Program are subject to the same evaluation standards as are the savings estimates associated with programs that install more traditional end-use measures. Those evaluation standards, as set forth in Section B, above, require final savings estimates to be reviewable, appropriate, and reliable to be accepted by the Department. The Department also has allowed companies implementing DSM to recover LBR based on engineering estimates, so long as such LBR is reconcilable based on measured savings. See D.P.U. 94-4-CC at 45-46, citing D.P.U. 91-44, at 108-109 (1991).

Therefore, the Department will allow the Company to recover LBR based on its 1994 and 1995 CVR Program implementation insofar as such LBR is fully reconcilable. The Department, however, directs the Company to enhance its evaluation efforts as much as reasonably possible,

and to provide reviewable, reliable, and accurate documentation of savings estimates of its CVR Program in its next CC filing.

F. Other Programs

The Department has reviewed the M&E reports of the following programs as presented by the Company in this proceeding: C/I New Construction Program, Equipment Replacement/Remodeling Program, BEEC, GAP, Energy Fitness Program, BHA/PHA Program, Heat Pump/AC Tune-Up Program, HVAC Rebate Program, and Energy Crafted Home Program. The Department finds the proposed savings estimates to be reviewable, appropriate and reliable. Therefore, the Department approves the Company's savings estimates for these programs for the purposes of calculating LBR and the financial incentive in this proceeding. Approved estimates for each of these programs can be found in Table 1 attached to this Order.

IV. CONSERVATION CHARGES

A. Alternative LBR Methodologies

1. Introduction

During discovery and hearings, the Department investigated three alternative methodologies by which LBR recovery could be calculated. The first alternative methodology was to calculate LBR by determining a gross LBR amount (i.e., similar to that provided by the Company in their proposal) and subtracting the costs that have been avoided as a result of the implementation of DSM ("Avoided Cost Methodology") (Exh. DPU-75; Tr. 1, at 12-54). The Department investigated various ways in which Company expenses could be avoided via the energy and capacity savings achieved through DSM installations, including variable operations

and maintenance expenses, transmission and distribution ("T&D") system investments, and increased wholesale sales (Tr. 1, at 12-54).

The Company provided information projecting that 26.5 percent of its future T&D system investments over the period 1995-1998 would be in response to load growth (Exh. DPU-79; DPU-RR-5). The Company provided additional information projecting annual T&D system investments of $72 million over the period 1995 through 1998 (Exh. DPU-80). The record also indicates that, over that same period, peak load is expected to increase by 136 megawatts ("MW"), or 34 MW per year on average (DPU-RR-2). Further, the record shows that, over the 1995 through 1998 time period, DSM is expected to produce 88 MW of summer peak savings, or 22 MW of peak summer savings per year (Exh. BE-1, Att. 2, at 1).[34] Based on the information cited above, the Company plans to spend approximately $559,000 for each megawatt of summer peak capacity saved on its T&D system in response to load growth (id.; Exhs. DPU-79, DPU-80). By multiplying the per-MW cost of the Company's T&D system related to load growth times the expected summer peak reduction due to annual DSM implementation (i.e., 22 MW), the Company could be expected to reduce its annual T&D expenditures by $12.3 million associated with anticipated yearly DSM implementation.

The Company indicated, however, that it doesn't rely on the information cited above, particularly that 26.5 percent of its future T&D system investments over the period 1995-1998 would be in response to load growth, when planning DSM installations (Tr. 1, at 46). The Company also provided a study indicating that there is little opportunity to avoid the upgrade of a

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[34] The calculation excludes load management programs which do not provide cumulative demand savings (Exh. BE-1, Att. 2, at 1).

particular T&D station through the targeted implementation of DSM measures (Exh. DPU-9, Att. at 1).

The Company provided an analysis, pursuant to a Department record request, indicating that variable costs other than fuel are avoided when energy production is displaced through the implementation of DSM measures (DPU-RR-6, at 1). The Company stated that such non-fuel variable costs include the cost of fuel additives, fuel handling, ash disposal, and maintenance on boiler equipment (id.). The Company also indicated that these variable costs are presently included in base rate demand and energy charges (id.). The analysis indicated that BECo's customers should receive a LBR credit ranging from $0.00038 per KWH to $0.00040 per KWH (id.).

The second alternative LBR methodology investigated by the Department would allow the recovery of LBR based on whether the Company earned its allowed return on equity ("ROE"), as specified in its last base rate case proceeding, during the year that the revenue was lost ("ROE Cap Methodology") (Exh. DPU-76; Tr. 1, at 54-59). Specifically, for any year in which the Company earned its allowed ROE, the ROE Cap Methodology would not allow recovery of LBR that occurred during that year (id.). The Company indicated that in a settlement to its last base rate proceeding, Boston Edison Company, D.P.U. 92-92 (1992) ("D.P.U. 92-92 Settlement"), a ROE cap was specified based upon the occurrence of certain actions (Tr. 1, at 56).[35]

The third alternative LBR methodology investigated by the Department would allow the Company to recover Department-approved LBR associated with a specific year of DSM

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[35] The D.P.U. 92-92 Settlement, at 4, provides specific monetary incentives to BECo based on the performance of its nuclear and fossil generation facilities.

implementation during a period equal to the average length of time between each of the Company's last four rate cases, or until new rates take effect subsequent to a new base rate proceeding, whichever comes first ("Rolling Period Methodology") (Exh. DPU-77). See also Eastern Edison Company, D.P.U. 94-4-CC (1994) ("D.P.U. 94-4-CC"). The Company calculated that the average length of time between each of its last four base rate cases is approximately three years (DPU-RR-7).

2. Positions of the Parties

a. Attorney General

The Attorney General argues that some modification to the existing methodology to calculate LBR "is necessary to reconstitute LBRs as a short term, revenue neutral remedy" to lost sales due to DSM program implementation (Attorney General Brief at 7). The Attorney General contends that LBR recovery was not intended to increase the profits of electric companies, but was intended to address the concern that implementing DSM would unduly penalize electric companies by pushing their rates of return below allowed rates (id., citing D.P.U. 86-36-F at 35). The Attorney General proposes that the Department adopt a methodology that combines the Rolling Period Methodology and the ROE Cap Methodology ("Combined Methodology") (id.). Specifically, the Attorney General argues that the Department should limit recovery of LBR to electric companies failing to earn their allowed ROE, capping the amount of LBR at a level no greater than that necessary to eliminate any earnings shortfall, and then limit the recovery period to a span that represents the average length of time between each of the Company's last four rate cases (id. at 7-8). The Attorney General contends that the Combined Methodology would

"recognize the two primary aims of the Department" in allowing LBR recovery: revenue neutrality and the short-term nature of the intended remedy (id. at 8). The Attorney General asserts that a threshold that would require that an electric company earn less than its allowed ROE before being permitted to recover any LBR would not be unfair "unless one incorrectly assumes companies have a right to excess earnings" (id.).

The Attorney General also contends that the Department should ignore the Company's argument that there is no basis for tying the duration of LBR recovery to the historical average interval between rate cases since the revenues will be lost due to DSM installations until the next rate case, which is not planned until the year 2000 (id. at 9). The Attorney General argues that the Company's plan to not file its next rate case until the year 2000 is not binding, and thus, not a basis for a reasoned decision (id.). The Attorney General asserts that the recovery of LBR was not intended to keep a company from filing a rate case for a longer period than it would have otherwise (id.).

In addition, the Attorney General submits that BECo inappropriately refers to LBR as "real costs to the Company" and as an incentive to the extent that the Company proclaims that the recovery of LBR encourages utilities to undertake comprehensive DSM programs (Attorney General Reply Letter at 1, citing Company Brief at 14, 15-17). The Attorney General argues that a financial incentive is already allowed by the Department for above-average performance of DSM programs, and that LBR was "not intended to be, and should not be, a second incentive to perform DSM" (id., citing D.P.U. 91-233-A at 17-19).

b. The Company

The Company argues that all parties to the proceeding recognize that LBR is a legitimate cost associated with the implementation of DSM, and that some parties would waiver from that position only if the amount of LBR the Company seeks to recover becomes too large (Company Brief at 14). The Company contends that the fact that LBR recovery might significantly affect the level of the Company's CC does not "negate the fact that these are real costs to the Company" (id.). The Company asserts that the reason why LBR should be recovered by the Company and why any reduction in the collection of LBR will create disincentives for DSM implementation is because LBR represents significant costs that were prudently incurred (id.). The Company submits that it is entitled to continue to recover LBR in a manner consistent with Department precedent, and that the total proposed amount of recoverable LBR should be included in the Company's 1995 CCs (id. at 15).

The Company contends that the recovery of LBR is allowed by the Department to remove the natural disincentive for utilities to implement comprehensive DSM programs (id.). The Company argues that fuel is the only significant short-term cost reduction that occurs as a result of DSM, and that the cost of fuel is "directly and immediately reflected in the customer's fuel charge" (id.).

The Company asserts that denying recovery of fully approved costs is contrary to the "regulatory compact" allowing utilities to recover their prudently incurred costs, plus a reasonable return, in exchange for regulatory oversight (id. at 15, n. 15). The Company argues that any reduction in or elimination of the recovery of LBR the Company is allowed to collect without a corresponding increase in the Company's base rates would be "fundamentally inconsistent with the

purpose of allowing recovery of LBRs" and would impose on utilities additional risk in connection with the perceived strength of their earnings (id. at 16).

The Company contends that the Avoided Cost Methodology examined by the Department is flawed because LBR recovery is intended to make a Company whole for past costs incurred, not avoided future costs (id. at 17, citing Tr. 1, at 50-54). The Company further argues that it would be difficult to separate reductions in operating expenditures due to cost cutting efforts, direct economic effects, and DSM implementation (id.). The Company submits that the Avoided Cost Methodology would not make sense during periods of excess capacity because, during those periods, no fixed costs are avoided because of DSM implementation (id. at 17-18).

The Company asserts that the ROE Cap Methodology is flawed because it would single out one component of the Company's revenue stream for special treatment, LBR, which results in single-issue ratemaking (id. at 18). The Company argues that focusing on this single component more than on other aspects of the Company's revenue stream upsets the relationship between rates and the Company's allowed rate-of-return (id.).

Regarding the Rolling Period Methodology, the Company contends that there is "no theoretical basis for arbitrarily tying the duration of LBR collection to an historical average" because revenues will be lost as a consequence of DSM implementation until the next rate case, regardless of the methodology imposed by the Department (id. at 18-19).

3. Analysis and Findings

In D.P.U. 86-36-F at 35-36, the Department stated that it would entertain proposals for lost revenue adjustments if a company could demonstrate that "the successful performance of its

[DSM] programs will result in sales erosion that adversely affects revenue in a significant, quantifiable way." The Department later indicated that recovery of LBR associated with variable O&M expenses might only be necessary for the "short term" because, in the long term, companies would be able to adjust their operating costs to reflect any reduction in sales. D.P.U. 89-260, at 106. In D.P.U. 89-260, the Department defined the short term as "less than one year." Id.

In Commonwealth Electric Company/Cambridge Electric Light Company, D.P.U. 93-15/16, at 9 (1993), the Department reaffirmed D.P.U. 89-260 and, in addition, directed the companies to provide an analysis of the fixed costs not recovered because of DSM implementation. The Department required a similar analysis of BECo in its Order on the Company's 1994 conservation charge. D.P.U. 91-233-A at 17.

The Department notes that the Company did not submit, in this proceeding, the analysis required in D.P.U. 91-233-A. Instead, the Department investigated, on its own motion,[36] various LBR recovery methodologies to determine the extent to which they reflect the fact that the energy and demand savings achieved through the Company's implementation of DSM programs will, over time, permit a reduction in the cost of providing electric service to ratepayers. In doing so, the Department investigated the extent to which the proposed methodologies would allow for the determination of net revenue lost due to DSM implementation; i.e., the Company's base revenue that is truly lost after taking into account the opportunities to reduce the cost of electric service. Through this investigation, the Department explored LBR recovery methodologies that would

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[36] On September 9, 1994, the Department issued an order of notice specifying its intention to investigate alternative methods by which to calculate LBR allowed for recovery by the Company.

provide sufficient incentive to the Company's management to reduce costs and to operate the Company's resources as efficiently as possible. Finally, the Department investigated the LBR recovery methodologies in this proceeding for consistency with Department precedent, applicability to all electric companies, and simplicity in its administration. See D.P.U. 94-4-CC.

In its brief, the Company argued that the Avoided Cost Methodology would not be appropriate because LBR recovery should make a Company whole for its past expenditures incurred, not for avoided future expenditures. However, in D.P.U. 89-260, at 104, when first allowing the recovery of LBR, the Department determined that "[h]istorical test year ratemaking assumes a direct relationship between costs and sales, i.e., it assumes that a growth in sales is accompanied by increased costs. As a result, increased revenues resulting from increased sales are assumed to be necessary to cover these increased costs." Id. Clearly, the Department did not limit LBR recovery to "past costs incurred."

The Company further argued that the Avoided Cost Methodology would not be appropriate because it would be difficult to separate reductions in operating expenditures due to cost cutting efforts, direct economic effects, or DSM implementation. The record indicates that BECo was able to identify short-term cost reductions (i.e., variable non-fuel O&M) associated with DSM implementation. The Department finds that these short-term cost reductions should not be included in the calculation of LBR recovery. Therefore, the Department directs the Company to reduce its request for recovery of LBR in 1995 by the values provided in response to DPU-RR-6, and to submit revised CCs, consistent with this directive, in its compliance filing to this Order.

The Department finds that, although the Company did provide aggregate T&D information as it relates to load growth, the Company was not able to identify specific long-term cost reductions due to DSM implementation. However, the Department finds that, while the actual value of long-term expenditures that would be reduced because of DSM implementation is not specified on the record, it can be deduced, using aggregate system cost information, that certain T&D expenditures can be avoided as a result of DSM program installations, and thus that modification of the LBR recovery methodology is appropriate.

The Department has found that with good information, the Avoided Cost Methodology could provide an accurate determination of the effect of DSM energy and capacity savings on a company's net revenue due to DSM implementation (i.e., the reduction in revenue minus the reduction in costs). See D.P.U. 94-4-CC at 41. However, because the Company could not provide specific information regarding cost reductions as it relates to DSM implementation, the Department will not require the Company to calculate LBR using the Avoided Cost Methodology in this proceeding.

The Department notes that in D.P.U. 94-4-CC at 42, the Department rejected the ROE Cap Methodology and the Combined Methodology proposed by the Attorney General in that proceeding. The Department found that these methodologies might create a disincentive for Eastern Edison Company ("EECo") to advance its competitive position through cost reductions and implementation of other operational efficiencies. Id. The Department finds that a similar disincentive may apply to BECo in this proceeding. In addition, the Department found that it would be inappropriate to assume that an increase in EECo's earnings as a result from a broad

range of factors would only be the result of a reduction in costs due to DSM implementation. Id. In this proceeding, the Department finds that concern remains valid. Therefore, the Department finds that neither the ROE Cap Methodology nor the Combined Methodology would be appropriate to apply in this proceeding.

In evaluating the Rolling Period Methodology, the Department finds that this methodology is likely to best meet the Department's objectives. First, because the Rolling Period Methodology allows for the recovery of lost base revenue for a period equal to the average, historic time span between rate cases, it provides a reasonable approximation of the Company's costs that would be sought in a rate case proceeding, and, thus, a reasonable approximation of the extent to which the Company's implementation of DSM programs will, over time, permit the Company to reduce the costs of providing electric service to its ratepayers. That is, from a theoretical perspective, when proposing a modification to its base rates, a company effectively indicates that the test year is evidence of a change in its long-term (i.e., recurring, periodically recurring, or extraordinary[37]) costs to provide electric service. See D.P.U. 94-4-CC at 42-43; Fitchburg Gas and Electric Light Company, D.P.U. 1270/1414, at 33 (1983). In addition, the reduction in load growth resulting from DSM should allow the Company to alter (i.e., defer, reduce, or terminate) its long-term T&D investments. Further, the potential restructuring of the electric utility industry has provided a profound incentive to electric utilities to maintain stable rates and reduce the frequency of rate case filings. To the extent that the Company does not file a

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[37] Although extraordinary costs cannot be anticipated and, therefore, are not recurring or long-term in nature, they must be amortized over an extended period of time to allow for consistency in rate design. Fitchburg Gas and Electric Light Company, D.P.U. 1270/1414, at 33 (1983).

base rate case for a period longer than the average, historic time span between rate cases, the Department observes that certain cost reductions made possible by DSM can help maintain a company's profitability.

Second, the Department finds that, unlike the Avoided Cost Methodology and the ROE Cap Methodology, the Rolling Period Methodology will provide the Company with a direct and consistent incentive to reduce costs and to improve the efficiency of operations wherever and whenever possible.

Third, the Department finds that the Rolling Period Methodology is consistent with precedent because cost recovery for several components of a company's cost of service (e.g., rate case expense) is treated in a similar manner; it could be applied to all electric companies; and it would be relatively simple to administer. Accordingly, the Department will allow the Company to recover LBR associated with each DSM implementation year for a period equal to the average time span between each of its last four rate cases: three years. The Department notes that the Rolling Period Methodology will require the Company to remove LBR associated with DSM installations in 1991 and 1992 from its calculation of LBR recovery in 1995, and to submit revised CCs, consistent with this directive, in its compliance filing to this Order. The Department notes that reconciliation of LBR associated with 1992 DSM installations will still be required consistent with the Department's findings on the Company's savings estimates in Section III, above.

B. Appropriate Test-Year

1. Introduction

The Company seeks in this proceeding LBR recovery in 1995 of $13.1 million (Exh. DPU-RR-10, exh. 1, at 3). The Company calculated the 1995 LBR recovery amount based on the estimated energy savings from DSM installations during 1991 through 1995 (id. at exh. 6, at 1).

On October 30, 1992, the Department approved a settlement agreement between the Company, the Attorney General, and the Department of Energy Resources to the Company's rate case proceeding in D.P.U. 92-92 ("D.P.U. 92-92 Settlement"). The D.P.U. 92-92 Settlement allowed a $29 million rate increase on November 1, 1993, and an additional $29 million rate increase on November 1, 1994. Boston Edison Company, D.P.U. 92-92, at 9-10 (1992). Pursuant to the D.P.U. 92-92 Settlement, the Company may not seek any other changes in its base rates before November 1, 1995, except under limited circumstances. Id. at 10.

2. Positions of the Parties

a. Attorney General

The Attorney General argues that the Company should be required to reduce the 1995 LBR recovery amount by $6,410,471 (Attorney General Brief at 9). The Attorney General contends that, because the D.P.U. 92-92 Settlement was a multi-year agreement designed to avoid rate cases by allowing rates to increase between the filing of rate cases, the Company should not recover 1995 LBR associated with DSM installations during 1991 through 1993 (id. at 11-12).

The Attorney General notes that the Department implemented its LBR policy after several commentators in the proceedings in D.P.U. 86-36-F, including BECo, argued to allow electric companies to adjust their rates between rate cases to compensate for any significant sales erosion and resultant revenue loss caused by the implementation of successful DSM programs (id. at 11). The Attorney General also notes that base rates usually do not change during the period between rate cases, but the D.P.U. 92-92 Settlement was designed to allow multi-year increases and to avoid the filing of rate cases (id.).

The Attorney General further notes that the D.P.U. 92-92 Settlement provided that LBR recovery would continue consistent with Department precedent, but is silent as to whether LBR should be recovered "on top of the base rate increases in the three-year rate plan" outlined in the D.P.U. 92-92 Settlement (id. at 11-12). Therefore, the Attorney General asserts, Department precedent and policy must guide resolution of this issue (id. at 12). The Attorney General argues that Department policy and precedent indicate that recovery of LBR was intended to be a short-term, revenue neutral mechanism designed to maintain the relationship of sales to revenues between rate cases, and that the rate increases allowed in the D.P.U. 92-92 Settlement adequately maintain that relationship without the need for the Company to collect LBR (id.).

The Attorney General implies that, because the D.P.U. 92-92 Settlement allowed a rate increase effective in 1994, LBR recovery associated with DSM installations in 1991, 1992, and 1993 should be removed from the total LBR calculation (id.). Therefore, the Attorney General asserts, it "would be equitable and appropriate to remove $6,410,427 of LBR recovery from the CC calculation in light of the rate increases allowed in D.P.U. 92-92" (id.).

b. The Company

The Company argues that the Attorney General's contention is inconsistent with the terms of the D.P.U. 92-92 Settlement, and should be rejected (Company Reply Brief at 11). The Company submits that the D.P.U. 92-92 Settlement clearly states that "[t]he Parties understand and agree that ... lost base revenues related to DSM programs ... will continue to be included through the Conservation Charge, consistent with applicable Department precedent" (id. at 11-12). The Company asserts that the Attorney General's argument lacks any support in the D.P.U. 92-92 Settlement and stretches the clear meaning of the section of the settlement in question (Article VI.C) (id. at 12).

The Company argues that the D.P.U. 92-92 Settlement was the settlement of a single rate proceeding and did not create three separate and distinct rate cases with separate costs of service and revenue requirements (id.). The Company contends that the 1993 and 1994 rate increases "merely phased in the increase which the Company had sought in 1992" (id.). The Company also asserts that Article II.C of the D.P.U. 92-92 Settlement clearly indicated what could and could not be added to base rates, and that LBR was not mentioned in this article (id.).

Further, the Company argues that the revenues used to determine rate levels in the D.P.U. 92-92 Settlement reflected only six months' worth of DSM implementation (id.). Therefore, the Company contends, there is no basis for claiming that the rate increases of $29 million in November 1993 and in November 1994 reflected LBR resulting from DSM (id.). The Company concludes that LBR recovery was intended to "restore the assumed relationship between sales levels and revenue requirements that were used in setting the rates before an electric company

began achieving savings from its [DSM] programs" (id. at 12-13, citing D.P.U. 86-36-F at 35-36).

3. Analysis and Findings

The issue at hand is an interpretation of the D.P.U. 92-92 Settlement and the Department's precedent regarding the relationship between recovery of LBR and rate increases allowed through a base rate proceeding. The Attorney General contends that the rate increases allowed pursuant to the D.P.U. 92-92 Settlement adequately maintain the relationship of sales to revenues between rate cases, and thus, recovery of LBR is not necessary. The Company contends that the 1993 and 1994 rate increases allowed pursuant to the D.P.U. 92-92 Settlement merely phased in a single rate increase, and was not two separate and distinct increases.

The Department finds the D.P.U. 92-92 Settlement allows only for the recovery of LBR through the CC, "consistent with Department precedent" (D.P.U. 92-92 Settlement at 9). The Department interprets the rate increases allowed pursuant to the D.P.U. 92-92 Settlement to represent the phase-in of a single rate increase, not multiple, separate increases. Accordingly, the Department rejects the arguments of the Attorney General on this issue, and thus, will not require the Company to make additional modifications to its proposed recovery of 1995 LBR other than those required in other sections of this Order.

C. Appropriate Rates for Calculating LBR

1. Description

The Company submitted LBR calculations based on savings estimates[38] multiplied by energy and demand rates for various rate classes (Exh. BE-2, exhs. 7-21). The Company stated

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[38] The Company presented estimates of savings achieved in each year from 1991 through 1995 (projected) (Exh. BE-2, exhs. 7-21).

that since the CC currently is computed for the residential class as a whole, the Company simply used the R-1 rate to compute LBR resulting from residential programs (Tr. 1, at 63).[39] The Company stated that all customers who are eligible to participate in the High Use Program are R-3 customers and therefore, the Company acknowledged, it would be appropriate to use the R-3 rate in calculating LBR (Tr. 1, at 64). However, the Company noted that using the R-3 rate in calculating LBR increases the difficulty of the calculation (id.). The Company indicated that it intends to file in January 1995 an alternative allocator for LBR based on a three-year average of DSM savings by rate class (Exh. DPU-146; Tr. 1, at 76-77).

2. Analysis and Findings

The Department recognized that LBR is created by the successful performance of DSM programs resulting in sales erosion. D.P.U. 86-36-F at 35-36. In approving recovery of LBR, the Department sought to "restore the assumed relationship between sales levels and revenue requirements that were used in setting the rates." D.P.U. 89-260, at 105. However, the Department notes that, in order for LBR to be calculated accurately, the savings estimates must be multiplied by the rates assigned to the classes in which the savings actually occurred. When a DSM program serves more than one rate class of customers, the Department expects the Company to calculate LBR using the three year average of DSM savings by rate class that will be submitted to the Department in January 1995. In the case if the High Use Program, the Department directs the Company to use the R-3 rate in calculating LBR.

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[39] The Company noted the following exceptions to this procedure: for the Multifamily Program the Company used a combination of R-1 and G-2/T-2 rates; for BHA and PHA the Company used the G-2/T-2 rate (DPU-RR-8).

D. Allocation

1. Company Proposal

In this proceeding, the Company proposed to implement a new methodology for the allocation of its DSM program costs and of LBR (Exh. BE-2, at 2). First, the Company proposed to allocate all indirect costs associated with a particular DSM program, which include the costs of marketing, administration, and monitoring and evaluation (totalling $9.4 million dollars) based on the number of participants served in each rate class (id. at 3). Second, the Company proposed to allocate 1995 direct DSM program costs, depreciation expenses, return on amortization, and taxes on the return on amortization for the years 1992, 1993, and 1994, totaling approximately $56 million, by applying the results of a probability of dispatch ("POD") analysis (id. at 4).[40] The Company indicated that the results reflect the cost to provide energy to each class and, therefore, reflects the benefit to the system of avoiding the production of energy equal in size to the DSM savings amount (id.). The Company's POD analysis revealed that of the total costs of production required to provide electric service to the system, 28 percent is required for the R-1 rate class, four percent is for the G-1 rate class, 45 percent is for the G-2 and T-2 rate classes, and 24 percent is for the G-3 rate class (id.).

The Company also proposed to allocate LBR for each DSM program based on the number of participants served in each rate class by that program (id. at 3).[41] The Company indicated that, for a number of reasons, LBR recovery could not be allocated to each eligible rate class based on

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[40] The Company referred to the results of the POD analysis as the production cost factors (Exh. BE-2, at 4).

[41] The Company proposes to recover $15.9 million in total LBR.

the percentage of energy savings achieved by the rate classes (Tr. 1, at 72). The Company stated that the primary database used for DSM analysis does not contain rate class information on the program participants (id. at 74). The Company stated that it was difficult to cross-reference the DSM database with another that contains rate class information due to mismatched account numbers, customers on multiple rates, and lack of participant-specific savings estimates (id. at 75). The Company indicated that it intends to file in January 1995 ("January 1995 Filing") an alternative allocator for LBR recovery based on a three-year average of DSM savings by rate class (Exh. DPU-146; Tr. 1 at 76-77).

2. Position of the Parties

a. Attorney General

The Attorney General contends that, in the Company's last CC Order, the Department directed the Company to use actual participation rates in allocating DSM expenditures, not estimates of long-run penetration as proposed by the Company at that time (Attorney General Brief at 13, citing D.P.U. 91-233-A, at 5-8. The Attorney General argues that the Company's current proposal to allocate direct DSM expenditures based on a production cost methodology is inconsistent with Department precedent, and that the Company should be required to reallocate the recovery of DSM expenditures by using actual participation rates as required in D.P.U. 91-233-A (id.).[42]

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[42] The Attorney General notes that, based on the Company's analysis, allocation of DSM expenditures based on actual participation would decrease the CCs for residential and G-3 rate classes from their proposed levels and would increase the CCs for the G-1/T-1 and G-2/T-2 rate classes from their proposed levels (Attorney General Brief at 15, citing AG-RR-5, at 2 and DPU-RR-10).

The Attorney General asserts that the Department previously rejected an electric company's proposal to allocate DSM program costs in the same manner as a supply resource (id. at 14, citing in Massachusetts Electric Company, D.P.U. 89-194/195 at 210-212 (1990) ("D.P.U. 89-194/195")). The Attorney General contends that the Department specified that cost allocation should be designed to achieve fairness by reflecting "the company's cost to serve each rate class, directly assigning those costs attributable to providing services to a given class and fairly apportioning common costs when direct assignment is impossible" (id. at 15, citing D.P.U. 89-194/195). The Attorney General submits that the Department reaffirmed that decision in many subsequent decisions (id. at 14-15, citing D.P.U. 90-335, at 113; Boston Gas Company, D.P.U. 93-60, at 284-298 (1993)). The Attorney General argues that the same principles of fairness apply in this proceeding (id. at 15).

The Attorney General contends that the Company's production cost allocation methodology emphasizes the capacity requirements of each rate class while the benefits of DSM are energy related, not capacity related (Attorney General Reply Brief at 2). The Attorney General further argues that almost all energy savings are captured by participants, not by the total system, and that cost allocation should follow these benefits (id.).

b. The Company

The Company argues that the Department, in its Order in D.P.U. 91-233-A, issued two directives regarding the methodology by which DSM costs should be allocated (Company Brief at 21). The first Department directive, according to the Company, was that future DSM program expenditures should be allocated based on actual historical participation rates and calculable

changes from historical rates (id. at 21-22, citing D.P.U. 91-233-A at 6). The second Department directive, according to the Company, was that DSM program costs should be allocated to the rate classes that receive the benefits of those expenditures (id. at 22, citing D.P.U. 91-233-A at 6). The Company contends that it has responded to these directives (id.).

The Company states that it views DSM savings and associated costs much like it views the output and costs of generating power (id.). The Company argues that the primary benefit of DSM programs in a capacity surplus situation is a reduction in fuel consumption, and that reduction translates into an overall reduction in the system-wide fuel adjustment adder (id.). The Company submits that system fuel costs are reduced regardless of who participates in the Company's DSM programs; thus, all customers in BECo's service territory will experience a reduction in their fuel adjustment adder whether they participate in a DSM program or not (id.). Therefore, the Company asserts, it is appropriate that the allocation of direct DSM program costs reflect the system-wide benefits produced by such costs in reducing the overall energy production requirements of the system (id.). The Company concludes that the proposed allocation methodology should be approved because it complies with the Department Order in D.P.U. 91-233-A, and because it accurately ties the costs to the customers who are actually receiving the benefits of the DSM programs (id. at 23).

3. Analysis and Findings

a. Program Expenses

The Department has stated explicitly in past orders that DSM program costs should be allocated to reflect a company's cost to serve each rate class, and that DSM-related costs should

be allocated to the rate classes that receive the benefits of those expenditures. D.P.U. 91-233-A. See also D.P.U. 89-194/195 at 211 (1990); D.P.U. 91-80 Phase Two-A at 138. In this proceeding, the Company has argued that the "cost to serve each rate class" should be interpreted as the cost to provide electric service to each rate class. Conversely, the Attorney General has argued that the "cost to serve each rate class" should be interpreted as the cost of providing the Company's DSM programs to each rate class.

Further, the Company argues that a reduction in fuel consumption translates into an overall reduction in the system-wide fuel adjustment adder, and thus, all customers benefit from energy savings from DSM installations. The Attorney General argues that almost all energy savings, and the associated benefits, are captured by participants, not by the total system. The Department finds that reduced fuel consumption will coincide with reduced energy consumption at a DSM program participant's facility, and thus, primarily reduce the fuel costs for that customer.[43]

Further, the Department notes that in D.P.U. 89-194/195, at 212, the Department determined that "customers who are prohibited from participating in a program because their class has not been offered that program should not have to see their bills rise to pay for it." Therefore, the Department finds the Company's proposed allocation of direct DSM program expenditures based on a POD analysis to be inappropriate and inconsistent with precedent. Accordingly, the

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[43] The Department notes that because energy savings will occur on the margin, fuel costs may decrease for non-participants by the difference between average fuel costs and marginal fuel costs. Although there is no evidence on the record to indicate the dollar value of that difference, the bulk of fuel cost savings is likely to remain with the participating customer.

Department directs the Company to reallocate all direct expenditures based on the expected cost of providing the Company's DSM programs to each rate class, and thus, to submit revised CCs in its compliance filing to this Order.

Regarding the Company's proposal to allocate indirect DSM program expenditures by the number of participants served in each eligible rate class, in D.P.U. 91-233-A at 6, the Department directed the Company to allocate DSM expenditures based on actual historical participation rates and calculable changes from historical participation rates. The Department issued this directive in order to minimize the uncertainty associated with customer participation levels and the impact that might have on the stability of the conservation charges. Id.[44] The Department reaffirms that goal. The Department notes that our Order in D.P.U. 89-194/195, at 211, specified that it is appropriate to allocate joint and common costs in a way that reflects the costs to serve each class when direct assignment is impossible. The Department finds that the Company's proposal to allocate indirect DSM program expenditures based on the number of participants served in each eligible rate class is reasonable and consistent with precedent, and therefore accepts the proposal.

b. LBR and Financial Incentives

In D.P.U. 91-233-A at 8, the Department directed the Company to reconcile 1993 and 1994 LBR and financial incentives based on actual participation rates in accordance with the DSM Settlement in Boston Edison Company, D.P.U. 91-233 (1992) ("D.P.U. 91-233 Settlement"). The Department further directed the Company to allocate future LBR and financial incentives

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[44] The Department did not intend the Company to base recovery on participation levels, per se, but rather, to smooth out significant year-to-year modifications to specific CCs by using the average level of DSM expenditures per rate class over a multiple-year period. D.P.U. 91-233-A at 7.

based on measured savings by rate class, consistent with the precedent stated in D.P.U. 91-80 Phase Two-A.

In this proceeding, the Company proposed to allocate all LBR (i.e., reconciliation from 1993 and 1994, and incremental 1995 LBR) based on participation by rate class in the Company's programs. The Department finds that the Company's proposal to allocate 1995 LBR based on expected participation rates is contrary to our directive in D.P.U. 91-233-A. Therefore, the Department directs the Company to reallocate 1995 LBR based on the quantity of DSM savings achieved by each rate class, consistent with the approved savings estimates and LBR methodology specified throughout this Order, and submit revised CCs in its compliance filing to this Order. In doing so, the Company should rely on its analysis of alternative allocation, based on a three-year average of DSM savings by rate class, expected to be submitted to the Department in its January 1995 Filing.

The Department notes that the Company did not specify how it allocated dollars subject to reconciliation, including LBR and program expenditures, or the 1993 financial incentive it proposes to collect in 1995. The Department directs the Company to allocate the 1993 financial incentive, which it proposes to collect in 1995, based on the quantity of DSM savings achieved by each rate class from implementation in 1993, and submit revised CCs in its compliance filing to this Order. Further, the Department directs the Company to separate reconcilable dollars into LBR and program expenditures, and allocate consistent with the directives set out, above.

E. Incentive Calculation

The Company proposed to collect in 1995 a financial incentive of $1,022,968 associated

with energy and capacity savings due to DSM installations in 1993 (Exh. BE-2, exhs. 1, at 3; 4 at 10). The Company calculated the proposed financial incentive as five percent of the net benefit of $20,459,368 derived through the DSM installations in 1993 (id., exh. 4, at 10). The Company calculated the net benefit as the total benefit of $65,446,354 minus the total costs of $44,986,986 (id.). The Department finds the Company's calculation of its 1993 incentive, recoverable in 1995, to be accurate and appropriate. The Department notes that the 1993 incentive calculation is based on energy and capacity savings which are subject to the Department's initial review in the instant proceeding and final review in 1996. Therefore, the Department approves the Company's recovery of the 1993 incentive, subject to reconciliation consistent with any modifications to the initial savings estimates specified in Section III, above, and consistent with the Department's findings on the final savings estimates, expected to be reviewed in 1996.

In 1994, the Company collected a financial incentive of $483,661 associated with energy and capacity savings due to DSM installations in 1992. The Department notes that those energy and capacity savings are subject to Department and review and modification in this proceeding. Therefore, the Department directs the Company to reconcile the 1992 incentive, based on any modifications to savings estimates specified in Section III, above, and modify the proposed 1995 CCs as necessary in a compliance filing to this Order.

F. Rate Impacts

1. Description

As a part of its filing in this proceeding, the Company submitted a proposal to recover in 1995 all expenses associated with 1995 implementation, whereas in 1992, 1993, and 1994, the

Company had amortized approximately 61 percent of expenditures over a six year period (Exh. BE-2, exh. 2, at 2; DPU-RR-10, exh. 1, at 3).[45] The Company stated that the decision to stop amortization was made in order to reduce the level of regulatory assets on the Company's balance sheets which is an important consideration given the possibility of a competitive future for utilities (Tr. 2, at 4; Tr. 1, at 128).

The Company proposed to recover $42,045,581, its current DSM budget, through the 1995 CCs (DPU-RR-10, exh. 1, at 3; DPU-RR-13).[46] The Company also proposed to recover (1) $14,162,276, or one-sixth of the cumulative amortization amount from 1992, 1993, and 1994 ($84,973,654); (2) $6,502,944, the proposed return on the cumulative amortization balance; and (3) $2,171,530, taxes on that return equal (id.). In total, the Company proposed to collect $83,761,316 through the CCs in 1995 (id.).[47]

The Company presented bill impact calculations based on current rates and on using "typical" bills[48] for each customer class (id. at exh. 1, at 2). The Company reported bill impacts as

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[45] Pursuant to DPU 91-233 Settlement, the Company amortized direct investments in DSM for 1992, 1993, and 1994 over six years, except for expenditures associated with ENCORE and existing load management programs. D.P.U. 91-233 Settlement at 4.

[46] In light of Company's determination that four programs are not cost-effective without the inclusion of externality values, the Department directed the Company to submit a proposal for a course of action, and for the cost recovery associated with that course, in the compliance filing to this Order (see Section II. C. 3., above). Therefore, it is unclear what amount the Company will seek to recover.

[47] The Company submitted revised pages to Exhibit BE-2 in response to DPU-RR-10. All dollar amounts referenced in this paragraph are taken from the revised pages in DPU-RR-10.

[48] Typical customers were defined by rate class as follows: a typical R-1 customer consumes 500 KWH per month; an R-3 customer consumes 1,000 KWH per month; a G-1 customer

percent increases in total bills as a result of an increased conservation charge (id.). The largest percentage increase appears in the G-3 class which shows a 3.12 percent increase in an average bill (combining summer and winter effects) (id.). The Company also presented dollar increases due to the increased conservation charge ranging from $1.52 per month increase for G-1 customers to $683 per month for G-3 customers (id.).[49]

The Company submitted several scenarios for expensing and amortizing DSM expenditures and stated that it considered a variety of proposals (Exh. DPU-143; Tr. 1, at 128-129). Although the Company's proposal results in higher CC rates in 1995-1996 than proposals including amortization, the Company chose to expense all of its 1995 DSM expenditures because this approach yields lower CC rates in later years (particularly 1998-2000) (Exh. DPU-143; Tr. 1, at 128-129).

The Company stated that its amortization return calculation, which computes its return on amortization balance and taxes using the entire amortized balance at the beginning of each year rather than a monthly calculation, was a method agreed to in the D.P.U. 91-233 Settlement (Exh. DPU-144). On the record in this proceeding, the Company stated that it is appropriate to change to a return calculated on a monthly basis for 1995 collections (id.).

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consumes 350 KWH per month; a G-2 customer consumes 4,000 KWH per month; a T-2 customer consumes 96,000 KWH per month; a G-3 customer consumes 245,000 KWH per month (DPU-RR-10, exh. 1, at 2).

[49] Other average monthly increases by rate class are as follows: R-1, $1.65 per month; R-3, $3.30 per month; G-2, $7.56 per month; T-2, $181.44 per month (DPU-RR-10, exh. 1, at 2).

2. Positions of the Parties

a. Attorney General

The Attorney General states that rate continuity is an important objective of the Department (Attorney General Brief at 16, citing Western Massachusetts Electric Company, D.P.U. 91-290, at 8 (1992); Massachusetts Electric Company, D.P.U. 92-278, at 116 (1992); Boston Edison Company, D.P.U. 1720, at 112 (1984)). The Attorney General also states that another Department objective is to minimize rates (id., citing Western Massachusetts Electric Company, D.P.U. 94-8-CC Phase I, at 18 (1994)). The Attorney General noted that the Department recognizes that amortization would result in carrying charges which must ultimately be paid by the ratepayers and which increase as the period for recovery increases (id.). However, the Attorney General states that the Department found an appropriate balance between objectives by capping CC rates for some rate classes and amortizing the remaining underrecovery over a period of three years (id.). The Attorney General contends that the same result would be achieved in this case by capping the CC level for the G-1/T-1 rate class for 1995 at no greater than 100 percent more than the 1994 CC rate for this rate class and amortizing any remaining underrecovery over a period of three years (Attorney General Brief at 16-17).

b. CLF

CLF points out that the Company made the decision to end amortization of DSM expenditures due to concern with the level of regulatory assets on its balance sheet and concern about the possibility of "stranded" investments in a future competitive electric industry (CLF Brief at 6, citing Tr. 2, at 4-6). CLF argues that (1) the Company's fear about the treatment of

amortized DSM expenditures in a restructured electric industry may have been compounded by the incorrect impression that BECo is the only company in Massachusetts that is amortizing DSM expenditures;[50] (2) the Company's fear is based on little more than speculation; and (3) it is highly unlikely that such amortized expenditures will become stranded, given that the expenditures were made with the encouragement of regulators as least-cost strategies and with the support of most customers (id. at 7). CLF contends that it is far more probable that assets that faced potent initial opposition and that have proven to be uneconomic, for example, nuclear plants, will be stranded (id. at 7).

CLF argues that the Company should strive for an orderly transition to expensing DSM expenditures and combine this effort with a shift to increased emphasis on market transformation strategies which would reduce the need for ratepayer investments by achieving energy savings more economically than BECo's current DSM strategy (id. at 8, n. 6). CLF recommends that the Company phase out amortization over a period of years while minimizing lost opportunities (id. at 8). However, CLF does not propose a specific strategy for this phase out, arguing that the state of the record in this proceeding (specifically, the failure of the Company to submit revised information responses based on corrections made late in this proceeding) does not permit such a proposal (id.).[51]

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[50] CLF notes that Western Massachusetts Electric Company, Commonwealth Electric Company, and Cambridge Electric Light Company all amortize DSM expenditures (CLF Brief at 7, citing D.P.U. 94-8A-CC at 4, D.P.U. 91-80 Phase Two-A at 143.

[51] CLF cites several tables which need revision based on corrections (submitted in DPU-RR-10 on November 29, 1994) of an error that the Company found in Exh. BE-2 (CLF Brief at 8-11).

CLF points out that the Company considered rate impacts when cutting its DSM budget by more than 26 percent (id. at 7, citing Exh. DPU-17, Tr. 2, at 4-5). CLF contends that before the Company corrected Exhibit BE-2, the total rate impact the Company found acceptable was $87.6 million (id. citing Exh. BE-2, exh. 1, at 3). CLF presented the above points in support of the argument that the Company should maintain its DSM budget at the 1994 level (id. at 6).

c. The Company

The Company argues that amortizing DSM expenditures creates regulatory assets on the Company's books which financial institutions view as having the potential of being a form of stranded investment (Company Brief at 8-9, citing Tr. 2, at 6; Exh. DPU-162, Att. 1, at 139). The Company further argues that amortization results in greater amounts ultimately to be paid by ratepayers than under the Company's recommended scenario of no amortization (id. at 9). Therefore, the Company concludes that there is no reason for the Department to require the Company to continue amortization since it is not in the best interest of the Company or its ratepayers (id. at 10).

As stated in Section II above, in its revised filing, the Company requested that the Department approve those programs that remain cost-effective without consideration of monetized environmental externalities, as well as those programs in which the Company has made commitments to customers (Exh. BE-39). The Company also proposed that the Department defer approval of four residential programs that are not cost-effective without inclusion of environmental externalities in the benefit/cost analysis until the Company redesigns such programs to be cost-effective. The Company stated it will redesign these programs within 30 days of

issuance of the Department's Order in this docket (id.). The Company did not submit any revision of the amounts it proposes to collect in 1995.

3. Analysis and Findings

The record shows that the Company proposes to expense all 1995 DSM costs in order to limit its future liability by reducing its regulatory assets. The Department has previously recognized as objectives rate continuity and rate minimization, and has stated that amortization would result in carrying charges which must ultimately be paid by ratepayers and which increase as the period for recovery increases. D.P.U. 94-8-CC Phase I, at 18.

Given the nature of increasing competition in the electric power industry, the Department finds that it is not appropriate to place the burden of current expenses on future ratepayers unless necessitated by continuity and fairness considerations. In this proceeding, the Department finds that it is reasonable for the Company to expense DSM costs fully in 1995. However, the Department continues to have concerns about specific bill impacts for any one customer class. Therefore, the Department directs the Company to submit a cross-section of bill impacts for each rate class, consistent with all changes to the Company's proposed CCs, as modified by this Order. The Department will then determine if the rate impacts are reasonable and if so, recovery of the Company's expenses will be approved at that time.

Regarding the issue of the amortization return calculation, the Department has ordered previously that, in future DSM proceedings, proposed schedules for the amortization of DSM program expenditures should accurately reflect unamortized balances and the monthly recovery of related costs. D.P.U. 91-233-A, at 23. The Company failed to submit such a calculation in its

filing in this proceeding but acknowledged on the record that a monthly calculation is the appropriate method for recovery of these costs. The Department directs the Company to revise its calculation of return on amortization balance and taxes to accurately reflect unamortized balances from 1992, 1993, and 1994 implementation, given that payments are made to the Company through the CCs on a monthly basis, and to submit revised CCs, consistent with this directive, in its compliance filing to this Order.

V. MODIFICATION OF THE MONITORING AND EVALUATION SCHEDULE

A. Company Proposal

The Company, in response to the recommendations of its consultants, proposed to modify the schedule for program evaluation which presently requires that impact, process, and implementation evaluations of each program be conducted each year (Exh. BE-3, at 7).[52] The Company recommends that the Department adopt a two-year reporting cycle for evaluations (Company Brief at 38). The Company stated that there are advantages to a two-year evaluation cycle, including (1) a reduction in evaluation costs; (2) a longer post-installation evaluation period for at least one of the two years and no loss of post-installation evaluation time for the other year; and (3) a longer time period for persistence effects to become apparent in the billing data (Exh. DPU-16). The Company also noted what it perceived as advantages for the Department, such as the ability to stagger the filings of all the utilities rather than having to review the evaluations of every utility every year (id.).

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[52] The Company stated that it has no plan to conduct process evaluations for 1995, except for the C/I Retrofit Program and other lost opportunity programs (Tr. 2, at 70, 71, 75). The Company indicated that it chose to eliminate the process evaluations in 1995 because the Company has been oversurveying and oversampling the customers (id. at 71).

The Company suggested that full scale process evaluations, including telephone and personal interviews, be conducted every two years, and that limited process evaluations be conducted in the alternate years (Exhs. BE-3, at 7; DPU-15). These limited process evaluations would consist of market assessments (size, free ridership, and spillover) for the lost opportunity programs and database reviews for all programs (Exhs. BE-3, at 7; DPU-15). The Company stated that it intends to employ site visits in order to ascertain if there were any changes at a facility (Tr. 2, at 72). The Company stated that process evaluations are not necessary each year and that frequent evaluations are becoming burdensome to its limited population of large commercial and industrial customers (Exh. BE-3, at 7; Tr. 2, at 71). According to the Company, a process evaluation should be conducted only when there is a significant program change or a significant amount of time has elapsed in program implementation (Tr. 2, at 72).

The Company also proposed to conduct impact evaluations every other year (id. at 84). The Company proposed to use the previous impact evaluations and the known implementation, which would be the number of participants and the measures installed, to calculate the savings estimates in the years in which no impact evaluations are done (id. at 85). This method is currently employed by the Company to calculate the projected portion of its proposed conservation charges (id.).

The Company stated that if significant program changes occur, such as IRM implementation, it would conduct full process and impact evaluations in the two years immediately following those changes and then proceed with an alternating schedule (id. at 76; Company Brief at 38). The Company assumes that the IRM bid winners will begin program

implementation in calendar year 1996 (DPU-RR-19). Thus, the Company proposed that in 1997 and 1998, full process and impact evaluations will be conducted in order to assure that the programs are performing well (id.). An annual Conservation Charge with true-ups would still be filed to go into effect on February 1 each year (Company Brief at 38).

Neither CLF nor the Attorney General commented on the Company's proposal.

B. Analysis and Findings

The Company has implemented its DSM programs since 1987. These programs have been the subject of annual monitoring and evaluation since 1990. The Department notes that, in recent years, the Company's programs have not changed significantly, such that the value of annual evaluations is reduced relative to the cost of performing such evaluations. Moreover, the Department acknowledges that frequent evaluations may impose burdens on the Company's customers who are required to respond to surveys.

The Department notes that the Company's proposal includes full process and impact evaluations to be conducted where there is a significant program change or if a significant amount of time has elapsed in evaluation of a particular program. The Department finds this aspect of the Company's proposal to be consistent with the Department's policy on evaluation. Therefore, the Department accepts the Company's proposal to conduct detailed process and impact evaluations every other year as reasonable. The Department, however, expects that if IRM is not implemented in 1996 as planned, the Company will conduct another full evaluation of its programs in 1996.

VI. ORDER

Accordingly, after due consideration, it is hereby

ORDERED: That Boston Edison Company implement the Residential Electric Space Heat Program according to the redesign submitted in response to DPU-RR-18, while ensuring that the program remains cost-effective, and to submit projections of customer participation levels, recalculated energy and demand savings estimates, and the associated net benefit and benefit/cost ratio, in a compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company submit a proposal for a course of action regarding implementation of, and cost recovery for, the four residential programs that are not cost-effective without valuation of environmental externalities in the interim period with the compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company recalculate savings estimates for the eight customers treated through the Large C/I Retrofit Program based on the overall realization rate developed through billing analyses and adjusted engineering estimates as discussed in Section III.D.2, above, and submit these revised savings estimates, with a reconciliation of all applicable incentives and lost base revenues associated with these savings, in a compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company submit the calculations which support the adjustment to annualized savings of 0.7 percent and to 1992 savings estimates of 6.9 percent for the Large C/I Retrofit Program as discussed in Section III.D.2, above, and submit these revised savings estimates, with a reconciliation of all applicable incentives and lost base revenues associated with these savings, in a compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company reduce the savings estimates for the Large C/I Retrofit Program in 1992 associated with the single self-generating customer, by 50 percent, and submit these revised savings estimates, with a reconciliation of all applicable incentives and lost base revenues associated with these savings, in a compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company reduce its request for recovery of lost base revenues in 1995 by all calculable short-term cost reductions (i.e., variable non-fuel operating and maintenance) associated with DSM implementation, as provided in response to DPU-RR-6, and to submit revised CCs, consistent with this order, in a compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company remove lost base revenue associated with DSM installations in 1991 and 1992 from its calculation of lost base revenue recovery in 1995, and to submit revised CCs, consistent with this order and with the Department's findings on the Company's savings estimates, in its compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company shall use the R-3 rate in calculating lost base revenues for the High Use Program, and to submit revised CCs, consistent with this order, in its compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company shall reallocate all direct expenditures based on the expected cost of providing the Company's DSM programs to each rate class, and thus, to submit revised CCs in its compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company shall reallocate, based on a three-

year average of DSM savings by rate class, lost base revenue based on the quantity of DSM savings achieved by each rate class, consistent with the approved savings estimates and lost base revenue methodology specified throughout this Order, and submit revised CCs in its compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company shall allocate the 1993 financial incentive, which it proposes to collect in 1995, based on the quantity of DSM savings achieved by each rate class from implementation in 1993, and submit revised CCs in its compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company separate reconcilable dollars into lost base revenues and program expenditures, and allocate consistent with the directives set out in this Order; and it is

FURTHER ORDERED: That Boston Edison Company submit a cross-section of bill impacts for each rate class, consistent with all changes to the Company's proposed CCs, as modified by this Order; and it is

FURTHER ORDERED: That Boston Edison Company shall revise its calculation of return on amortization balance and taxes to accurately reflect unamortized balances from 1992, 1993, and 1994 implementation, and to submit revised CCs, consistent with this directive, in its compliance filing to this Order; and it is

FURTHER ORDERED: That Boston Edison Company shall submit a compliance filing by noon on January 31, 1995; and it is

FURTHER ORDERED: That Boston Edison Company shall comply with all directives

contained herein.

By Order of the Department,

_____
Kenneth Gordon, Chairman

_____
Mary Clark Webster, Commissioner

Appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. (Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).